2015/2016

CORPORATE RESPONSIBILITY REPORT

MERCK & CO., INC.
Kenilworth, N.J., U.S.A.

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OUR APPROACH

We are working to address global health challenges, protect the environment, support our communities and develop our employees while operating with ethics and integrity.

SEEKING SUSTAINABLE SOLUTIONS TO IMPROVE BOTH HEALTH AND SOCIETY

While we celebrate 125 years of proud heritage, we look forward to continuing our legacy, engaging with partners and patients as a trusted leader to improve access to health care and grow our impact on society—across our businesses and around the world.

LEARN MORE

DETERMINING OUR MATERIAL ISSUES IN CONSULTATION WITH OUR STAKEHOLDERS

We recently completed a materiality assessment to identify and prioritize the corporate responsibility issues that are most important to our business and our external stakeholders. The resulting matrix displays the issues that have significant relevance for our company and to our stakeholders.

LEARN MORE

ALIGNING OUR WORK WITH ESTABLISHED REPORTING FRAMEWORKS FOR MORE THAN A DECADE

Since publishing our first corporate responsibility report in 2005, we have been committed to using best-in-class frameworks to guide our reporting. These include the Global Reporting Initiative (GRI), the Access to Medicine Index, the UN Global Compact, and the UN Sustainable Development Goals.

LEARN MORE

OUR APPROACH AT-A-GLANCE

ACCESS TO MEDICINE INDEX >

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"We believe that our future will be even better as we continue to seek novel and sustainable solutions that improve both health and society."

— **Kenneth C. Frazier**
Chairman and CEO

FTSE4Good

OUR APPROACH AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our overall corporate responsibility efforts. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

STAKEHOLDER ENGAGEMENT

We recognize that we can't solve major health, environmental and economic challenges alone We look to collaborate on solutions with other companies, government agencies, policy makers, NGOs, opinion leaders, patient groups, academic institutions and others whenever possible.

CR GOVERNANCE

Our Office of Corporate Responsibility coordinates our efforts to be transparent about how we operate, in order to earn and retain the trust and confidence of our customers, employees, shareholders and other stakeholders.

AWARDS & RECOGNITION

For our comprehensive approach to corporate responsibility, we have received numerous awards from leading publications and organizations, and have been included in a wide variety of sustainability indexes.

FOR MORE INFORMATION ON OUR APPROACH TO CORPORATE RESPONSIBILITY

LEARN MORE

We are committed to improving health and well-being around the world. From developing new therapies that treat and prevent disease to helping people in need, we are guided by a rich legacy and inspired by a shared vision.

Our company's core values are inspired by a desire to improve life, achieve scientific excellence, operate with the highest standards of integrity, expand access to our products and employ a diverse workforce that values collaboration.

Our corporate responsibility approach is aligned with the company's mission, vision and values, and articulates how we see our responsibilities in the areas of access to health, ethical and transparent business practices, environmentally sustainable operations, scientific advancement, employee wellness, and value creation for our shareholders.

Since successfully managing social, ethical and environmental issues involves all employees, we have established a company-wide corporate responsibility framework, as well as a list of key performance indicators to measure our performance and progress in our areas of strategic focus: Access to Health, Environmental Sustainability, Employees, and Ethics & Transparency.

Integrated into our approach to corporate responsibility is a commitment to constructive engagement with stakeholders. We recognize that issues that matter to key stakeholders can very quickly become material issues for our shareholders. So we seek to balance our responsibilities in ways that support our fiduciary duty to generate long-term shareholder value, while also considering the needs of other stakeholders. Learn more about our stakeholder engagement process.

In 2014, we completed a formal corporate responsibility (CR) materiality assessment in order to more fully understand our economic, environmental and social impacts, to identify stakeholder expectations regarding our performance, and to help further refine a corporate responsibility strategy that aligns with our company's business strategy. We continue to engage stakeholders to support this journey and help us deliver greater value to society and to our business.

OUR APPROACH

CEO LETTER

This year marks our company's 125th anniversary, a historic milestone that calls us to reflect on our legacy of innovation and its tangible impact on people and societies around the world.

GRI G4-1

Since 1891, we have pushed the boundaries of science to create breakthrough medicines and vaccines while finding ways to bring these discoveries to more people who can benefit from them. We continue to add to that legacy today, and our 2015/2016 Corporate Responsibility Report highlights ways we are delivering on our commitments to improve access to health care, protect the environment, and engage our employees, all while operating with the highest ethical standards.

Consistent with our enduring mission to save and improve lives through innovation, our pipeline and products focus on areas of significant unmet medical need, including cancer, the hepatitis C virus and life-threatening infections. We pursue these advances with a firm belief in the value they offer—helping people improve their health while reducing problems that can lead to costly hospital stays and long-term care.

Our legacy is a powerful reminder that great medicines truly change the world, and of our responsibility to invest in new solutions to today's pressing medical needs.

The continued progress of our investigational Ebola Zaire vaccine illustrates our dedication to discover and develop novel medicines and vaccines to combat infectious disease. We are responsible for the research, development, manufacturing, and regulatory efforts for the vaccine, and we are working closely with other stakeholders to accelerate the continued development, production, and, if licensed, distribution of the vaccine.

In 2015, through our *MSD for Mothers* initiative, we made advances in protecting the lives of mothers and children. In partnership with the U.S. Government program *Saving Mothers, Giving Life*, maternal mortality rates in facilities in target districts in Uganda and Zambia were nearly halved. We also decreased stock-outs of contraceptives in Senegal from more than 80 percent in 2011 to less than two percent in all public health facilities by March 2015.

We took special pride in congratulating Dr. William C. Campbell, one of our company's retired scientists, who was jointly named the 2015 Nobel Prize winner in Physiology or Medicine for a discovery that led to our company's development of MECTIZAN® (ivermectin), a treatment for river blindness. Thanks to the public health opportunity created by that discovery, a global effort was launched in 1987 that continues today, with a range of partners committed to consigning that debilitating disease to the history books.

We know that a healthy planet is essential to human health and to the sustainability of our business, so our company continues to look for creative ways to have a positive impact on the environment. By the end of 2015, we had attained—ahead of schedule—all three of our environmental goals related to water, emissions, and waste. Our commitment to environmental stewardship earned us recognition from the CDP, which awarded us "Disclosure Leadership Status" for

our Climate Change Investor Report. While we are proud of this progress, we know we can make additional improvements to further protect the environment and minimize our use of natural resources.

Through our commitment to ethics, values and transparency, we continually seek to earn the trust and confidence of our stakeholders. As one example of this commitment, in 2015 we significantly increased our business with diverse suppliers and small enterprises. And to foster an ongoing ethical environment with our network of partners, we instituted a more formal program to evaluate the risks for labor and human rights impacts in our supply chain.

All of these contributions are possible only through the vision, dedication and tireless efforts of our employees worldwide. As we seek to foster an environment that brings out the best in our global team, we've learned that many of the world's most significant ideas are born when people from different backgrounds and experiences come together to share perspectives. To give one example, our Global Diversity and Inclusion Consortium expanded its efforts to embed diversity and inclusion into our business, in order to differentiate our company and positively impact our business results. In addition, to foster a healthy and productive work environment for our employees, in 2015 we initiated a campaign focused on ergonomics, including workplace design. As a result, we reduced the number of ergonomic-related injury cases by 52 percent from 2014. And to harness the energy of our employees to support local communities and invoke the spirit of our milestone 125th anniversary, we initiated a volunteerism campaign to achieve 125,000 employee volunteer hours in 2016.

While we celebrate 125 years of proud heritage, we look forward to continuing our legacy, engaging with partners and patients as a trusted leader to improve access to health care and grow our impact on society, across our businesses and around the world. To guide our efforts, we are committed to supporting the 10 universally accepted principles of the UN Global Compact. And we look to frameworks such as the new Sustainable Development Goals (SDGs) as tools to focus, measure, and align our global corporate responsibility efforts. My personal role as a member of the Business and Sustainable Development Commission in support of the SDGs reinforces this commitment.

We believe that our scientific and business contributions have helped make the world a healthier, stronger and more hopeful place. And we believe that our future will be even better as we continue to seek novel and sustainable solutions that improve both health and society.

Sincerely,

Kenneth C. Frazier

Chairman and Chief Executive Officer

OUR APPROACH

REPORTING FRAMEWORKS

Since the release of our first corporate responsibility report in 2005, our company has been committed to using established frameworks to report our performance on environmental, social and governance (ESG) issues.

GRI G4-15

We currently utilize the Global Reporting Initiative (GRI), the Access to Medicine Index (ATMI), the UN Global Compact (UNGC), and the new UN Sustainable Development Goals (SDGs), which replaced the Millennium Development Goals in September 2015, as our frameworks for corporate responsibility reporting.

ACCESS TO MEDICINE INDEX >

GRI INDEX >

UN GLOBAL COMPACT >

UN SUSTAINABLE DEVELOPMENT GOALS >

In preparing our disclosures relating to access to medicine performance, we refer to the Access to Medicine Index.

The Access to Medicine Index (ATMI) is a first step toward a useful framework for transparent reporting about access to medicine performance, which will help inform our stakeholders and also enable us to compare our performance with that of peers on relevant metrics. We believe that this will help us focus on continuously improving the things that matter most.

The table below summarizes where our disclosures can be found on the website in relation to the ATMI criteria.

General Access to Medicine Managment	Report Location
Stakeholder Engagement	Stakeholder Engagement
ATM Governance	Our Approach to Access CR Governance
ATM Management System	Our Approach to Access
Public Policy & Market Influence	
Advocacy & Lobbying	Public Policy
Competitive Behavior	Sales & Marketing
Market Behavior	Sales & Marketing
Innovative R&D	Research & Development Infectious Diseases Global Burden of Disease Access to Health Statement of Guiding Principles
Adaptive R&D	Research & Development HIV/AIDS Vaccines MSD for Mothers Access to Health Statement of Guiding Principles Infectious Diseases Women's Health
Intellectual Property Sharing	Our Approach to Access Public Policy HIV/AIDS Neglected Tropical Diseases Public Policy Position Statements Clinical Research
Equitable Pricing, Manufacturing and Distribution	
Marketing Approval	Product Registration Access to Health Statement of Guiding Principles Sales & Marketing Pricing & Commercialization
Equitable Pricing	Pricing & Commercialization Our Approach to Access Access to Health Statement of Guiding Principles Public Policy Position Statements
Manufacturing & Distribution	Manufacturing & Supply Chain HIV/AIDS Vaccines Women's Health Access to Health Statement of Guiding Principles
Patents & Licensing	
Patents	Our Approach to Access Anti-Counterfeiting Research & Development HIV/AIDS Merck Product Patents Women's Health Vaccines Public Policy Position Statements
Non-Exclusive Voluntary Licensing	HIV/AIDS Manufacturing & Supply Chain Neglected Tropical Diseases Public Policy Position Statements Access to Health Statement of Guiding Principles
Capability Advancement in Product Development & Distribution	
Capacity Building in R&D	Infectious Diseases Our Approach to Access Health Research & Development Key Initiatives Access to Health Statement of Guiding Principles
Capacity Building in Quality Management & Distribution	Key Initiatives Access to Health Statement of Guiding Principles
Product Donations & Philanthropic Activities	
Product Donations	Product Donations Medical Outreach Program Key Initiatives Public Policy Position Statements
Philanthropy	Our Giving Community Key Initiatives Priorities & Guidelines Community Investment Foundation

REPORTING FRAMEWORKS

SUSTAINABLE DEVELOPMENT GOALS

In 2015, world leaders gathered in New York City for the 70th United Nations General Assembly, during which they formally adopted the Sustainable Development Goals (SDGs).

These goals—17 in total, with 169 specific targets—are as ambitious as they are inspiring. Building on the Millennium Development Goals (MDGs), the SDGs represent the international community's aspirations for improving the lives of the world's poorest people by 2030. To date, there has been no greater effort to overcome extreme poverty, poor health, hunger and other development challenges.

> "We are honored to play a role in the global efforts to achieve the SDGs. Through our ongoing commitments to address important health challenges, including maternal health, HIV/AIDS, cervical cancer and neglected tropical diseases, we are mobilizing the best of our company to help save and improve lives around the world."

Kenneth C. Frazier, Chairman and CEO

The table below highlights our investments into efforts that address the SDGs and other global health and development challenges.

Goals	Description	Actions
SDG 1	End poverty in all its forms everywhere	N/A
SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Supporting a Sustainable Food Supply
SDG 3	Ensure healthy lives and promote well-being for all at all ages	Access to Reproductive Health; Air Emissions; Community Investment ; Employee Safety; Health; Infectious Diseases; Materials & Waste; MSD for Mothers; Our Approach to Access; Pricing & Commercialization; Product Stewardship; Research & Development; Vaccines; Water; Women's Health
SDG 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Education
SDG 5	Achieve gender equality and empower all women and girls	Global Diversity & Inclusion; Access to Reproductive Health; Human Rights
SDG 6	Ensure availability and sustainable management of water and sanitation for all	Community: Neighbor of Choice; Pharmaceuticals in the Environment; Water
SDG 7	Ensure access to affordable, reliable, sustainable and modern energy for all	Climate Change & Energy Use
SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	CDP Climate Change; Global Diversity & Inclusion; Human Rights; Our Approach to Environmental Sustainability
SDG 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Manufacturing & Supply Chain; Research & Development
SDG 10	Reduce inequality within and among countries	Global Diversity & Inclusion; Human Rights
SDG 11	Make cities and human settlements inclusive, safe, resilient and sustainable	Community: Disaster Relief; Community: Neighbor of Choice; Medical Outreach Program; Product Donations
SDG 12	Ensure sustainable consumption and production patterns	About This Report; Materials & Waste; Our Approach to Environmental Sustainability; Procurement & Supplier Relations; Product Stewardship;
SDG 13	Take urgent action to combat climate change and its impacts	CDP Climate Change; Climate Change & Energy Use
SDG 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Pharmaceuticals in the Environment; Supporting a Sustainable Food Supply
SDG 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Genetic Research; Materials & Waste; Packaging; Water
SDG 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Human Rights; Office of Ethics; Transparency Disclosures
SDG 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	CEO Letter; Community Investment; Foundation; Health; Manufacturing & Supply Chain; Neglected Tropical Diseases; Our Giving; Priorities & Guidelines; Product Donations

REPORTING FRAMEWORKS

GRI INDEX

We are reporting on our corporate responsibility efforts in alignment with the Global Reporting Initiative's (GRI) G4 Guidelines.

GRI G4-32

This framework offers a useful method for reporting on environmental, social and governance performance. Greater transparency on such matters is beneficial to our business because it helps to inform our stakeholders and also enables us to compare performance with that of peers on relevant metrics. We believe that this will help us focus on continuously improving the things that matter most.

Throughout this report, flags (such as the one above, "GRI G4-32") denote which GRI indicators are relevant to the text, where applicable. Roll over a flag to see a brief description of that GRI indicator.

The table below summarizes where the disclosures can be found.

Assurance

WSP conducted an independent third party review of our 2015 greenhouse gas and water inventories, and provided limited assurance for the data that we submit to CDP and for the Corporate Responsibility report. This data can be found on our Water and Climate Change & Energy Use pages. Please see WSP's limited assurance of our environmental data here.

Index #	Description	Report Location/Direct Answer
GENERAL STANDARD DISCLOSURES		
Strategy & Analysis (G4-1)		
GRI G4-1	CEO Letter	CEO Letter
Organizational Profile (G4-3 to G4-16)		
GRI G4-3	Organization name	Merck & Co., Inc. Kenilworth, N.J., USA
GRI G4-4	Primary brands, products and services	Our Business 2015 Form 10-K (page 1)
GRI G4-5	Headquarters location	Kenilworth, N.J., USA

GRI G4-6	Where the organization operates	Company Fact Sheet Algeria, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonedia, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Lebanon, Libya, Malaysia, Mexico, Montenegro, Morocco, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, Ukraine, United Kingdom, United States, Venezuela, Vietnam
GRI G4-7	Nature of ownership and legal form	2015 Form 10-K (page 31)
GRI G4-8	Markets served	Our Business 2015 Form 10-K (pages 1–3)
GRI G4-9	Scale of the organization	Economic Impact 2015 Form 10-K (pages 16–17, 33, 41)
GRI G4-10	Total number of employees by type	Global Diversity & Inclusion: Performance
GRI G4-11	Collective bargaining agreements	Office of Ethics: Performance
GRI G4-12	Supply chain description	Manufacturing & Supply 2015 Form 10-K (pages 1, 8, 10–13)
GRI G4-13	Organizational changes during the reporting period	About This Report 2015 Form 10-K (pages 16–17, 61)
GRI G4-14	Whether and how the precautionary approach or principal is addressed.	Our Approach to Environmental Sustainability
GRI G4-15	External charters, principles, or other initiatives	Reporting Frameworks CEO Water Mandate UN Universal Declaration of Human Rights International Covenant on Economic, Social and Cultural Rights Declaration on Fundamental Principles and Rights at Work
GRI G4-16	Membership associations	Public Policy: Industry Associations

Identified Material Aspects and Boundaries (G4-17 to G4-23)

GRI G4-17	Entities included in financial statements	About This Report
GRI G4-18	Process for defining report boundaries and content	About This Report
GRI G4-19	Material aspects included in the report	Materiality
GRI G4-22	Restatements	Restatements of information are included on the specific performance data pages and tabs.
GRI G4-23	Changes from previous reports in terms of scope and/or boundaries	None

Stakeholder Engagement (G4-24 to G4-27)

GRI G4-24	Stakeholder groups	Stakeholder Engagement: Stakeholder Groups
GRI G4-26	Approach to stakeholder engagement	Stakeholder Engagement

Report Profile (G4-28 to G4-33)

GRI G4-31	Report contact	Contact Us
GRI G4-28	Reporting period	January 1, 2015–December 31, 2015
GRI G4-29	Date of most recent report	Released in September 2015
GRI G4-30	Reporting cycle	Annual
GRI G4-32	"In accordance" option, GRI Index and report assurance	This report has been produced in alignment with GRI's G4 Sustainability Reporting Guidelines. You may find information on our external assurance of data on our FAQ page.
GRI G4-33	Policy regarding report assurance	FAQ

Governance (G4-34 to G4-53)

GRI G4-34	Governance structure of the organization	CR Governance Corporate Governance 2015 Form 10-K (pages 29–30) Leadership
GRI G4-38	Composition of the board and its committees	Corporate Governance 2016 Proxy Statement (pages 28–34) Leadership Policies of the Board
GRI G4-39	Whether the chair of the board is also an executive officer	Corporate Governance 2016 Proxy Statement (pages 74–75)
GRI G4-40	Nomination and selection processes for the board and its committees.	2016 Proxy Statement (page 26) Policies of the Board (pages 2–3)
GRI G4-41	Board conflicts of interest.	2016 Proxy Statement Policies of the Board http://www.merck.com/about/leadership/board-of-directors/home.html
GRI G4-42	Board and executives' roles in the organization's mission statements, strategies, policies, and goals related to sustainability impacts	CR Governance Governance, Public Policy and Corporate Responsibility Committee Charter
GRI G4-43	Board knowledge of sustainability topics	CR Governance 2016 Proxy Statement (page 23)
GRI G4-45	Board role in the identification and management of sustainability impacts, risks, and opportunities	CR Governance The Governance, Public Policy and Corporate Responsibility Committee Charter
GRI G4-46	Board ESG review of risk management processes	The Governance, Public Policy and Corporate Responsibility Committee Charter

GRI G4-47	Frequency of board review	The Governance, Public Policy and Corporate Responsibility Committee Charter
GRI G4-48	Report review	CR Governance
GRI G4-49	Board communication	2016 Proxy Statement (page 23)
GRI G4-51	Remuneration policies for the board and senior executives	2016 Proxy Statement (pages 39–69)
GRI G4-52	Process for determining remuneration	2016 Proxy Statement (pages 39–69)
GRI G4-53	Remuneration shareholder resolutions	2016 Proxy Statement (pages 38, 40)

Ethics and Integrity (G4-56 to G4-58)

GRI G4-56	Values and principles	Code of Conduct
GRI G4-57	Ethics hotlines	Office of Ethics
GRI G4-58	Whistleblowing	Office of Ethics

SPECIFIC STANDARD DISCLOSURES

Economic (EC1 to EC8)

DMA	Economic Performance: Disclosure on Management Approach	Our Business Economic Impact
GRI G4-EC1	Economic value	Financial Well-Being Community 2015 Form 10-K (pages 33, 63, 76, 78)
GRI G4-EC2	Climate change risks	Climate Change & Energy Use 2015 Form 10-K (page 17) CDP Climate Change (CC5.1–CC5.1c, CC6.1–CC6.1c)
GRI G4-EC3	Benefit plan coverage	Financial Well-Being 2015 Form 10-K (pages 117–123)
DMA	Indirect Economic Impacts: Disclosure on Management Approach	Supporting Our Communities Community
GRI G4-EC8	Indirect economic impacts	Our Approach to Access Pricing & Commercialization U.S. Patient Assistance Programs Key Initiatives

Environmental (EN1 to EN33)

DMA	Materials: Disclosure on Management Approach	Materials & Waste
GRI G4-EN2	Recycled input materials	Materials & Waste: Performance
DMA	Energy: Disclosure on Management Approach	Climate Change & Energy Use
GRI G4-EN3	Energy consumption (Scope 1 + 2)	Climate Change & Energy Use:Performance CDP Climate Change (CC11.2, CC11.3, CC11.3a, CC11.5)

GRI G4-EN4	Energy consumption (Scope 3)	Climate Change & Energy Use: Performance
GRI G4-EN6	Energy reductions	Climate Change & Energy Use: Performance Climate Change & Energy Use: Initiatives
DMA	Water: Disclosure on Management Approach	Water Environmental Goals
GRI G4-EN8	Water withdrawals by source	Water: Performance CDP Water (W1.2a, W5.1a)
GRI G4-EN9	Water sources affected by withdrawals	CDP Water 2016 (W2.6, W3.2a, W5.1)
DMA	Emissions: Disclosure on Management Approach	Climate Change & Energy Use Environmental Goals
GRI G4-EN15	GHG emissions (Scope 1)	Climate Change & Energy Use: Performance CDP Climate Change 2016 (CC7.1–CC7.4, CC8.1, CC8.2, CC9.1a, CC9.2d)
GRI G4-EN16	GHG emissions (Scope 2)	Climate Change & Energy Use: Performance CDP Climate Change 2016 (CC7.1–CC7.4, CC8.3a, CC10.1a, CC10.2c)
GRI G4-EN17	GHG emissions (Scope 3)	Climate Change & Energy Use: Performance CDP Climate Change 2016 (CC7.1–CC7.4, CC14.1)
GRI G4-EN18	GHG emissions intensity	CDP Climate Change (CC12.2–CC12.4)
GRI G4-EN19	Reduction of GHG emissions	Climate Change & Energy Use: Performance CDP Climate Change 2016 (CC7.1–CC7.4, CC12.1, CC12.1a, CC14.3a)
GRI G4-EN20	Ozone-depleting substances (ODS)	Air Emissions
GRI G4-EN21	NOx, SOx and other emissions	Air Emissions
DMA	Effluents & Waste: Disclosure on Management Approach	Materials & Waste Environmental Goals
GRI G4-EN22	Water discharge	CDP Water 2016 (W0.3, W1.2, W1.2b)
GRI G4-EN23	Waste by type and disposal method	Materials & Waste: Performance
GRI G4-EN24	Significant spills	EHS Management & Compliance: Performance
DMA	Products & Services: Disclosure on Management Approach	Green & Sustainable Science Materials & Waste
GRI G4-EN27	Mitigation of environmental impacts of products and services	Green & Sustainable Science
DMA	Compliance: Disclosure on Management Approach	EHS Management & Compliance
GRI G4-EN29	Environmental fines and sanctions	EHS Management & Compliance: Remediation EHS Management & Compliance: Performance

DMA	Transport: Disclosure on Management Approach	Not available
GRI G4-EN30	Environmental impacts from product distribution and employee travel	Climate Change & Energy Use: Performance CDP Climate 2016 (CC7.1–CC7.4, CC14.1)
DMA	Environmental Investments: Disclosure on Management Approach	Water: Initiatives
GRI G4-EN31	Environmental investments	Water: Initiatives We report on some of our environmental expenditures in the 2015 Form 10-K (pages 17, 70, 114–115). These expenditures are integrated into our sites' operating budgets. We do not currently have a system to tag expenditures as related to environmental protection and report them separately.
DMA	Supplier Environmental: Disclosure on Management Approach	Procurement & Supplier Relations
GRI G4-EN32	New suppliers screened using environmental criteria	Procurement & Supplier Relations

Labor Practices & Decent Work (LA1 to LA15)

DMA	Employment: Disclosure on Management Approach	Positive Work Environment
GRI G4-LA1	Number and rate of new employee hires and turnover	Positive Work Environment: Performance
GRI G4-LA2	Benefits provided to full-time employees	Financial Well-Being
DMA	Occupational Health & Safety: Disclosure on Management Approach	Employee Safety
GRI G4-LA6	Rates of injury, occupational disease, lost days, absenteeism, and work-related fatalities	Employee Safety: Performance
GRI G4-LA7	Workers with high incidence risk for diseases	Employee Safety: Programs
GRI G4-LA8	Health and safety topics covered in agreements with trade unions	While we do have a “Health and Safety” section in our U.S. trade union agreements, the specific language varies from agreement to agreement. They address medical services and surveillance, the company’s commitment to make a responsible provision for employee health and safety, and in some cases address protective equipment training.
DMA	Training & Education: Disclosure on Management Approach	Learning & Development
GRI G4-LA9	Average hours of training for employees	We conduct extensive training programs worldwide, however, we do not currently track the average number of hours of training per employee.
GRI G4-LA11	Employees receiving performance and career development reviews	Positive Work Environment: Performance

DMA	Diversity: Disclosure on Management Approach	Global Diversity & Inclusion
GRI G4-LA12	Composition of governance bodies and employees	Global Diversity & Inclusion: Performance
DMA	Supplier Assessment for Labor Practices: Disclosure on Management Approach	Procurement & Supplier Relations
GRI G4-LA14	New suppliers that were screened using labor practices criteria	Procurement & Supplier Relations

Human Rights (HR1 to HR12)

DMA	Human Rights Investments: Disclosure on Management Approach	Human Rights
GRI G4-HR1	Investment agreements and contracts that include human rights clauses or underwent screening	Procurement & Supplier Relations Business Partner Code of Conduct
GRI G4-HR2	Employee training on human rights	Office of Ethics: Performance Code of Conduct
DMA	Freedom of Association: Disclosure on Management Approach	Human Rights
GRI G4-HR4	Significant risk of freedom of association in operations and suppliers	Human Rights Procurement & Supplier Relations Business Partner Code of Conduct
DMA	Child Labor: Disclosure on Management Approach	Human Rights
GRI G4-HR5	Significant risk of child labor in operations and suppliers	Human Rights Procurement & Supplier Relations Business Partner Code of Conduct
DMA	Forced or Compulsory Labor: Disclosure on Management Approach	Human Rights
GRI G4-HR6	Significant risk of forced or compulsory labor in operations and suppliers	Human Rights Procurement & Supplier Relations Business Partner Code of Conduct
DMA	Human Rights Assessments	Human Rights
GRI G4-HR10	New suppliers screened for human rights	Procurement & Supplier Relations
DMA	Supplier Human Rights Assessments: Disclosure on Management Approach	Human Rights

Society (SO1 to SO10)

DMA	Local Communities: Disclosure on Management Approach	Supporting Our Communities Community
GRI G4-SO5	Confirmed incidents of corruption	Ethics & Transparency

In January 2009, our company signed on to the United Nations Global Compact, the world's largest and most widely embraced corporate citizenship initiative.

GRI G4-15

By signing on, we confirm our commitment to support the UN Global Compact's 10 universally accepted principles in the areas of human rights, labor, environment and anti-corruption. Signatories to the compact are required to annually report their activities in support of their commitment to instill accountability, drive continuous improvement, safeguard the integrity of the UN Global Compact as a whole, and contribute to the development of a repository of corporate practices.

The table below summarizes where these disclosures can be found on our website, and the letter from our CEO serves as our statement of continued support for the initiative.

2015 COMMUNICATION ON PROGRESS

Index #	Description	Report Location/Direct Answer
Human Rights		
UNGC-1	Businesses should support and respect the protection of internationally proclaimed human rights	Human Rights
UNGC-2	Businesses should make sure that they are not complicit in human rights abuses	Human Rights Procurement & Supplier Relations
Environment		
UNGC-7	Businesses should support a precautionary approach to environmental challenges	Product Stewardship Our Approach to Environmental Sustainability Procurement & Supplier Relations EHS Management & Compliance
UNGC-8	Businesses should undertake initiatives to promote greater environmental responsibility	Product Stewardship EHS Management & Compliance Procurement & Supplier Relations Our Approach to Environmental Sustainability

UNGC-9	Businesses should encourage the development and diffusion of environmentally friendly technologies	Product Stewardship Green & Sustainable Science
Anti-Corruption		
UNGC-10	Businesses should work against corruption in all its forms, including extortion and bribery	Code of Conduct Office of Ethics Procurement & Supplier Relations
Labour		
UNGC-3	Businesses should uphold the freedom of association and the effective recognition of the rights to collective bargaining	Human Rights
UNGC-4	Businesses should support the elimination of all forms of forced and compulsory labor	Human Rights
UNGC-5	Businesses should support the effective abolition of child labour	Human Rights
UNGC-6	Businesses should support the elimination of discrimination in respect of employment and occupation	Global Diversity & Inclusion Office of Ethics Human Rights

OUR APPROACH

MATERIALITY

We prioritize the issues that are most important to our business, and to our external stakeholders, based on the outcome of a formal corporate responsibility (CR) materiality assessment.

The resulting materiality matrix, shown below, represents the issues that internal and external stakeholders have identified as having significant financial, operational or reputational impact on the company, and illustrates where our company can have a significant impact on society and the environment.

GRI G4-19

For how we define each of our material topics in the matrix above, please see the definitions at the bottom of the page.

MATERIALITY PROCESS

The assessment, which concluded in 2014, included desktop research; a review of corporate objectives and strategies; analysis of media coverage; stakeholder feedback on prior reporting; industry benchmarking; consultative interviews with stakeholders both inside and outside the company; and intensive internal workshops and socialization sessions across the business.

Externally, we engaged more than 30 stakeholder groups that represented a cross section of advocacy interests, including on-the-ground implementation partners, socially responsible investors, environmental NGOs, public health advocates and health providers.

We used the findings from our survey submissions to CDP (formerly the Carbon Disclosure Project), the Dow Jones Sustainability Index (DJSI) and the Access to Medicine Index (ATMI), in addition to referencing the most current sustainability and corporate responsibility research reports, to select and refine a list of environmental, social and governance (ESG) issues for further analysis.

Internally, we engaged with senior executives from key functional areas and business units and asked these business leaders to identify the issues of highest importance with respect to their impact on:

- Financial value and revenue
- Operational excellence
- Compliance with regulations
- Corporate reputation
- Shareholder value
- Employees and their level of engagement

Externally, we engaged more than 30 stakeholder groups that represented a cross section of advocacy interests, including on-the-ground implementation partners, socially responsible investors, environmental NGOs, public health advocates and health providers. Through in-person interviews, we asked our stakeholders to indicate which issues were important to their groups or communities; where action from the private sector, and from our company in particular, is critical; and how we can drive excellence through our corporate responsibility efforts.

Stakeholders were asked to rank the list of material issues and impacts; assess our company's performance on these priority issues; and share their expectations related to strategy, reporting and stakeholder engagement.

The final results were endorsed by our own Social Business Investment Council, comprising senior executives from key company functions and divisions, and by the company's Board Committee on Governance, Policy and Corporate Responsibility.

We will continue to use this materiality process to refine and inform our approach to reporting and to help us prioritize our efforts addressing the issues of greatest significance to stakeholders and to our company's future success.

Definitions

ACCESS TO HEALTH

Anti-Counterfeiting
• Strategy and operations
• Monitoring and evaluation
• Supply chain security

Learn more.

Capacity Building
• Training and educational programs
• Local infrastructure improvements
• Skills and technology transfer to emerging countries

Learn more.

Clinical Trial Ethics
• Transparent management of clinical trial data
• Global standards to ensure ethics in R&D
• Sharing of data within the scientific community

Stakeholder Engagement and Learn more.

Disease Focus

• Development of medications/treatments based on health needs rather than lifestyle

Learn more.

Health Literacy
• The degree to which individuals have the capacity to obtain, communicate, process and understand basic health information and services to make appropriate health decisions

Learn more.

Local Development
• Contribution to local economic development

Learn more.

Pricing and Commercialization
• Pricing strategies
• Differential pricing
• Affordability
• Availability
• Registration
• Pricing transparency
• Reimbursement strategies

Learn more.

Product Safety
• Management standards
• Post-market surveillance

Learn more.

Use of Laboratory Animals
• Internal standards
• Transparent reporting
• Consideration of alternatives to animal testing
• Training

Learn more.

Ecosystem Impacts/Use of Natural Substances
• Use of natural substances (e.g. plants & animals) and materials
• Biodiversity preservation

Learn more.

Non-GHG
• Air emissions such as VOCs, SOx, NOx, etc.

Learn more.

Pharmaceuticals in the Environment
• Biological waste from patients/animals
• Unused/expired medicines

Learn more.

Water Use and Management

• Influent and effluent parameters, including source, scarcity, recharge rates, quality, treatment, and impacts on local communities

Learn more.

Employee Volunteerism
• Employee volunteer programs

Learn more.

Occupational Health and Safety
• Hazard minimization precautions that minimize hazards
• Promotion of employee health, safety, and well-being
• Assessments
• Provision of personal protective equipment
• Emergency response plans

Learn more.

Talent Development and Recruitment
• Training and development
• Recruitment
• Leadership development
• Retention
• Career management and promotion
• Compensation and benefits

Learn more.

ETHICS & TRANSPARENCY

Corporate Governance
• Corporate management
• Board structure
• Board independence
• Risk management
• Executive compensation
• Accountability

Learn more.

Ethics in Sales and Marketing
• Brand management and promotion
• Ethical marketing
• Competitive behavior
• Prevention of anti-competitive practices
• Compliance with regulatory authorities
• Anti-corruption/anti-bribery

Learn more.

Internal Controls
• Policies
• Standards
• Code of conduct
• Audits

Learn more.

Privacy of Patient Data
• Policies
• Standards
• Procedures
• Training

Learn more.

Transparency and Reporting
• Transparency disclosures
• Sustainability reporting (GRI, CDP, etc.)

OUR APPROACH

CR GOVERNANCE

Our company aspires to being open and transparent about how we operate, in order to earn and retain the trust and confidence of our customers, employees, shareholders and other important stakeholders. Our reporting and governance structure is an integral part of this commitment.

THE OFFICE OF CORPORATE RESPONSIBILITY

Our corporate responsibility performance is dependent on all of our employees—from our chairman and CEO to staff in each business unit, subsidiary, manufacturing plant and research laboratory. All employees are informed of our corporate responsibilities through our company's Code of Conduct, but we also recognize that a central coordinating function is necessary in order to ensure a comprehensive approach to corporate responsibility.

Six independent directors constitute our company's Board Committee on Governance, Public Policy & Corporate Responsibility.

The Office of Corporate Responsibility coordinates the development, implementation and communication of our global approach and, with strategic guidance from the Social Business Investment Council, is responsible for reporting on our company's performance. The Office of Corporate Responsibility works with business units and functional areas to integrate our corporate responsibility principles into business policies, strategies and practices, and brings the voice of external stakeholders into decision-making processes.

GRI G4-49

The Office of Corporate Responsibility, which supports the company's business strategy, is accountable for producing the annual Corporate Responsibility Report. To contact members of the Office of Corporate Responsibility, please click here.

THE CORPORATE RESPONSIBILITY REPORT WORKING GROUP

The members of the Corporate Responsibility Report Working Group, a diverse selection of employees from all divisions of the company, serve as content experts in their respective areas and work closely with the Office of Corporate Responsibility to help set goals and develop metrics that support and measure our overall corporate responsibility strategy and objectives. Individual members have been chosen to be active advocates for corporate responsibility within their respective areas.

GRI G4-43

THE SOCIAL BUSINESS INVESTMENT COUNCIL

The Social Business Investment Council (SBIC) serves as a high-level forum for strategic input and guidance on our social business investments to drive the value proposition for corporate responsibility. With the Office of Corporate Responsibility serving as the secretariat, the diverse membership of the SBIC provides vision and leadership on corporate responsibility objectives and targets, while facilitating cross-divisional input and alignment across functions and regions on corporate responsibility investments, initiatives and issues.

Specifically, the SBIC seeks to identify risks, opportunities and gaps in our social investment portfolio and corporate responsibility strategy, reviewing the impact of our corporate responsibility investments as they relate to the company's business objectives. Over time, the SBIC's efforts will promote further integration of corporate responsibility and shared value into our business activities through active internal and external advocacy.

GRI G4-34

GRI G4-42

GRI G4-43

GRI G4-45

GRI G4-46

GRI G4-48

BOARD COMMITTEE ON GOVERNANCE, PUBLIC POLICY & CORPORATE RESPONSIBILITY

Six independent directors constitute our company's Board Committee on Governance, Public Policy & Corporate Responsibility. Chaired by Leslie A. Brun, the committee is responsible for advising the company's Board of Directors and management on company policies and practices that pertain to the company's responsibilities as a global corporate citizen, its special obligations as a health care company whose products and services affect health and quality of life around the world, and its commitment to the highest standards of ethics and integrity in all its dealings.

Additionally, the committee is responsible for taking a leadership role in shaping the corporate governance of the company, including the development of a set of corporate governance guidelines for Board approval.

In addition to the Board Committee on Governance, Public Policy & Corporate Responsibility, other Board committees oversee issues related to corporate responsibility, such as audit and compliance, executive compensation, and research.

OUR APPROACH

STAKEHOLDER ENGAGEMENT

MAIN

We recognize that we can't solve major health, environmental and economic challenges alone, so we collaborate with others who share our commitment and who bring their own unique expertise to the table.

GRI G4-26

We conduct stakeholder engagement at both the corporate and the local level, depending on the issue. We engage with industry, governments, policy makers, nongovernmental organizations (NGOs), opinion leaders, patient groups, academic organizations, our employees, and others to inform our policies, our practices and the development of our products. Our intention is to build lasting relationships with our stakeholders; to understand their objectives, their expectations of our company and the potential for collaboration; and to enhance mutual trust and understanding.

We strive to exchange information, views and recommendations; to share activities and progress toward key goals; and to work in partnership toward common objectives. Engagement may take the form of one-on-one meetings, expert-input forums, roundtable discussions, industry coalitions, or formal partnerships.

STAKEHOLDER GROUPS

We engage with a diverse group of stakeholders to more fully understand their needs and expectations, and to gain insights that can inform our efforts to improve access to health care and foster progress toward solutions that benefit society and support our business.

GRI G4-24

GRI G4-SO1

PATIENTS AND CAREGIVERS

We embrace the opportunity to engage with patient organizations and to actively listen to patients to better understand their health care journeys, expected outcomes and decision-making considerations. For more information on our work with patient groups, please click here.

HEALTH CARE PROFESSIONALS

We are committed to providing appropriate and balanced information to physicians and other health care providers about our medicines, vaccines and ongoing research. For more information on our interactions with health care professionals, please click here.

PAYERS

We work with payers worldwide to inform their understanding of the relationship between the prices of our products and the true value they deliver to patients and health care systems. Learn more about our access initiatives.

GOVERNMENTS, MULTILATERAL ORGANIZATIONS AND REGULATORS

We work with policy makers, legislators, multilateral organizations and governments worldwide to ensure that policy and regulatory environments globally, nationally and locally foster patient access to medicines and vaccines, and that they are conducive to ethical business practices, science and innovation. Learn more about our public policy and advocacy positions.

SHAREHOLDERS

We strive to create shareholder value by identifying opportunities to meet customer needs and by managing our business responsibly to achieve superior financial results over the long term. Learn more about how we engage with shareholders.

INTERNATIONAL AND LOCAL ORGANIZATIONS

We work hard to identify the best organizations and individuals to collaborate with in order to address societal challenges and to inform debate on pressing issues. For more information about how we collaborate with others, please click here.

LOCAL COMMUNITIES

We work toward developing culturally appropriate mechanisms to engage and build relationships with our local community stakeholders. For more information on our contributions to communities, please click here.

ENVIRONMENTAL STAKEHOLDERS

We work to reduce the environmental effects of our operations and products and to promote sustainable environmental practices within the company, among our partners and throughout our supply chain. For more information on our environmental performance, please click here.

EMPLOYEES

We strive to foster a positive working environment for our employees by providing resources to improve their health and that of their families, opportunities to further their professional development, and more ways to get involved in the communities where they live. For more information on our employee relations, please click here.

SUPPLIERS AND BUSINESS PARTNERS

We strive to engage a diverse supplier base and to encourage responsible approaches on the part of suppliers regarding labor, employment, human rights, health and safety, ethics, diversity, and protection of the environment. For more information on our approach to procurement and supplier relations, please click here.

TRADE AND INDUSTRY ASSOCIATIONS

We engage with stakeholders through membership in numerous organizations. Within these groups, we aim to inform relevant debates in ways that are constructive and that ultimately foster improved patient access to medicines and vaccines globally. For more information, please click here.

We welcome your comments, questions and feedback to help guide the development of our programs, our reporting efforts and our corporate responsibility website. Contact us.

PATIENT ENGAGEMENT

Our company's mission is to continue to improve people's health through the discovery, development and marketing of innovative products that contribute to the quality of life.

We embrace the opportunity to engage with patient organizations and to actively listen to patients to better understand their health care journeys, expected outcomes and decision-making—particularly as it relates to how they take medication—and the challenges they may encounter when taking several medications or treating multiple conditions. We feel that listening to patients is critical to inspiring effective and relevant medical and scientific innovation.

Julie Gerberding, M.D., M.P.H., was appointed Chief Patient Officer in June 2016. In this newly established role, Dr. Gerberding leads the company's efforts to engage with patients and patient organizations to bring their perspectives into the company and help inform company decisions, and represents our company globally on patient-related matters.

We are committed to learning from the patient perspective and to empowering patients, caregivers and health care professionals by making public the results of clinical trials in a timely manner, whether the outcomes are positive or negative. Learn more.

We have a strong commitment to health literacy, and we believe that clear, simple information about clinical trials, diseases and medicine should be made easily available to people across a range of health-literacy levels. Learn more.

Because of the gaps in patient care and changes to health policy in such areas as vaccination, oncology, heart disease, HIV, hepatitis C infection, and other chronic conditions, there is a compelling need for the pharmaceutical industry to work more closely with patient organizations and other key stakeholders to better understand outcomes from the patients' point of view, and to improve access to therapies, validate measurement tools, and increase awareness of diseases.

We have a long history of collaboration with patient groups and health-related charities, including work related to improving knowledge and understanding of diseases and treatment options, resulting in informed decision-making among consumers in health care.

PRINCIPLES

Because patients are at the core of health systems, it is especially important to support patient societies and associations. Working with patient groups, we develop appropriate programs and projects that support their important efforts. We believe in collaborating with health care stakeholders—including government and other payers, health care providers, and patient organizations—to engage in programs that aim to improve patient education and patient care in therapeutic areas where we have expertise.

For these reasons, we support and participate in programs that help patient organizations increase disease awareness and improve access to medicines and better health care. We work with patient organizations to disseminate and share quality medical, scientific and pharmaco-economic information, consistent with legal and regulatory obligations, and with respect for their independence.

Because we recognize the legal and reputational risks of inappropriate donations or sponsorships, we have guidance documents, policies and compliance controls in place to ensure the integrity of our practices. We also comply with all applicable laws and regulations.

OUR APPROACH

PUBLIC POLICY

MAIN

We are committed to participating constructively and responsibly in the political process, and to providing clarifying analysis and information regarding the issues that affect our business and patient care.

A major element of our corporate responsibility approach is our public policy advocacy work and our outreach to stakeholders. Our outreach helps to inform and advocate for public policies that foster research into innovative medicines and that improve access to medicines, vaccines and health care. We believe this engagement is also fundamental to our understanding of—and response to—society's expectations of our company. Our engagement with stakeholders guides our business strategy and decisions, and strengthens stakeholders' understanding of—and trust in—our business.

We recognize that our outreach can help highlight and address important issues, leveraging the expertise of all our stakeholders to develop sustainable solutions to such challenges as disease, lack of education, environmental challenges and corruption. We continue to pioneer far-reaching programs and partnerships, the results of which demonstrate that more can be achieved by working together than by individual stakeholders working alone—and can make a sustainable difference.

ENGAGING RESPONSIBLY

Government proposals to regulate the health care system may directly affect our business and our incentives for pharmaceutical innovation. Important policy initiatives can also increase patient access to medicines and vaccines and to health care insurance coverage—particularly for patients in disadvantaged communities and regions.

Consequently, the company has chosen to help inform the debate on these issues in the U.S. and other countries. Our participation in the political process is guided by the following principles:

- Improve patient access to health care, including medicines and vaccines
- Encourage innovation by protecting intellectual property rights, advocating for government support of basic research, and supporting efficient and effective regulatory systems, among other issues

Our company's Executive Committee has overall governing responsibility for our public policy strategy, as guided by the Governance, Public Policy and Corporate Responsibility Committee of the Board of Directors. Our Global Public Policy Leadership Team leads the development and communication of policy positions on major issues. Statements summarizing our position on key public policy issues are posted on our corporate headquarters' website. Learn more.

HOW WE ENGAGE

We engage in public policy debates primarily by communicating information to government officials and policy makers.

Our U.S. Federal Policy and Government Relations office in Washington, D.C., is responsible for advocacy activities with the U.S. Congress and other bodies of the federal government. Advocacy at the state level is managed by our State Government Affairs & Policy organization. Outside the U.S., advocacy activities are managed at the regional, country or local level, with support from regional and corporate policy staff.

To assist our advocacy and policy analysis work, our company and our affiliates contract with a range of private firms specializing in government affairs advocacy. These firms employ government affairs consultants with particular expertise on issues of importance to our company. Our U.S. Action Network also informs our U.S.-based employees and retirees about important legislative issues, and serves as a conduit through which they can communicate with their representatives in Congress.

All of our employees must abide by our global corporate Code of Conduct "Our Values and Standards," which applies to our interactions with government officials and to advocacy activities on public policy issues. This code is intended to ensure that all information provided to government entities is complete and accurate to the best of an employee's knowledge and belief. In the U.S., there are also important federal and state lobbying-registration and disclosure laws with which we comply.

Our corporate policy on ethical business practices includes guidelines conforming to the U.S. anti-kickback laws and Foreign Corrupt Practices Act, making clear that no illegal payments of any kind (monetary or otherwise) are to be offered or made to individuals or entities—including local, state or federal government or political party officials or candidates in the U.S.; government or political party officials or candidates of any other nation; or officials of public international organizations—at any time or under any circumstances.

To improve access to information about our advocacy activities, we disclose costs associated with lobbying in the EU and the U.S. Click here for our 2015 reporting to the EU Transparency Register. Costs reflect the pro rata salary costs of MSD staff and the proportion of employee time and outsourcing spent on initiatives involving interest representation to European institutions.

In the U.S., in compliance with the Lobbying Disclosure Act, we file quarterly reports with the U.S. Congress disclosing the issues we are lobbying about and the amount of money we spend each quarter. These reports incorporate the expenses associated with lobbying the federal government, including those incurred by our U.S. Federal Policy and Government Relations office, and the portion of our trade association dues associated with federal lobbying.

OUR TOP LOBBYING ISSUES

In the U.S. in 2015, the top issues at the federal level for which our company lobbied were:

- Defense of Medicare Part D
- The 340B drug pricing program
- Comprehensive tax reform
- Implementation of the Affordable Care Act
- Patent Reform
- Trans-Pacific Partnership

In the U.S. in 2015 our company lobbied at the state level for these key issues:

- State implementation of the health benefit exchange component of the Affordable Care Act
- Support for patient access to medicines and vaccines
- Protection of public health immunization policies
- Education on disposal of unused medicines
- Interchangeability of biosimilars

In Europe in 2015, our advocacy focused on:

- Fostering a framework for a sound pricing and procurement regime in and across diverse EU member state economies
- Support for government vaccination, hepatitis and diabetes programs
- Launch dialogue for sustainable models to fund future cancer care
- Standards for health technology assessment and health literacy

- Science-based policies for biological medicines

The company's advocacy priorities are presented to the members of our Executive Committee and the Governance, Public Policy and Corporate Responsibility Committee of the Board of Directors annually, with periodic updates throughout the year.

POLITICAL CONTRIBUTIONS

Where permitted by law in the U.S., Canada and Australia, our company makes corporate political contributions, primarily to the electoral campaigns of individual candidates.

GRI G4-SO6

Our U.S. employees can also participate in the political process by joining a nonpartisan political action committee (PAC), through which they can pool their financial resources to support federal and state candidates. Except for administrative expenses, our company's Employees Political Action Committee (PAC) is funded completely by voluntary contributions from eligible employees. The PAC supports legislators from both major parties who understand and appreciate the work we do to discover and develop medicines and to make them available to the patients who need them.

Our corporate policy governing corporate and PAC contributions can be found here. In addition, we have developed the Principles Governing Corporate and Political Action Committee Spending. These principles are modeled on provisions in the Model Code for Political Spending, established by the Center for Corporate Political Accountability, and are intended to promote corporate accountability. In addition, we have developed Principles Governing Corporate and Political Action Committee Spending. These principles are modeled on provisions in the Model Code for Political Spending, established by the Center for Political Accountability, and are intended to promote corporate accountability.

Our company achieved a ranking in the top 5 percent on the Center for Political Accountability's 2015 CPA-Zicklin Index of Corporate Political Disclosure and Accountability. The CPA specifically recognized our company's internal process for ensuring compliance with our own political spending policies as a best practice.

We have a formal PAC Contributions Committee that makes decisions on spending for the PAC. This committee also makes decisions on our company's corporate political contributions. The committee is chaired by our executive vice president and general counsel and includes senior managers representing different divisions and corporate functions. The general counsel approves contribution recommendations, following review and approval by the committee.

To ensure compliance with our company policy and federal and state law, outside legal experts provide periodic guidance to our company on required disclosure of its political activities. We also perform periodic audits to assess and enforce compliance with our policy governing our corporate and PAC contributions, and we require those individuals who recommend corporate political contributions in the U.S. to certify their knowledge of and adherence to our corporate Policy and Principles Governing Corporate Political and Political Action Committee Contributions.

As required by our company policy and procedures, our executive vice president and general counsel send an annual report on the company's corporate political contributions for the previous year to our company's Board of Directors. The report discloses contributions made in the U.S., Australia and Canada, including the name of each candidate, committee or event and the amount disbursed. It also includes all trade association dues spent on lobbying and political activity in the U.S. that are greater than $25,000. We also submit a midyear report on corporate political contributions to the Board for its review. In addition, our contributions, policies and practices are reviewed and overseen by the Governance, Public Policy and Corporate Responsibility Board Committee. We invite comments and questions on both reports, which also describe any changes in our policies.

To improve access to information about our corporate political and PAC contributions in the U.S., we post them

semiannually, categorized by state, candidate and amount.

OUR CORPORATE POLITICAL CONTRIBUTIONS

In 2015, we spent a total of $655,500 on U.S. corporate political contributions. These contributions supported the campaigns of candidates for state-level offices in 25 states plus the District of Columbia. They also were used to support state legislative leadership committees of both parties, industry-affiliated PACs, and a number of national organizations representing elected state officials. These organizations meet periodically to discuss policy issues. Two examples are the Republican Governors Association and the Democratic Governors Association. Information on all contributions can be accessed here. Our representatives involved in state-government-affairs activities made the recommendations for specific contributions. These recommendations were reviewed and approved by the Corporate Political Contributions Committee, which mirrors our company's PAC Contributions Committee in membership and oversight procedures. Outside legal counsel conducted a thorough review of all proposed contributions to ensure that they were permitted under state law. Final approval was provided by the general counsel of our company.

To view a listing of our corporate and PAC contributions made within the U.S. in 2015, please click here.

We also provide grants to organizations whose role is to represent elected officials in support of public policy advocacy. State Government Affairs & Policy reviews its grants and corporate memberships on an annual basis to decide which of them may be considered for the upcoming calendar year, considering budget constraints and policy priorities. We disclose all public policy grants as part of our general grants disclosure.

The only other countries in which we provide corporate contributions to candidates or political parties are Canada and Australia. These contributions are subject to the same policies and governance procedures discussed above. To view our company's contributions made in Canada during 2015, please click here. To view our company's contributions made in Australia during 2015, please click here.

Archived corporate political contribution reports are available here.

INDUSTRY ASSOCIATIONS

Our company is a member of numerous industry and trade groups.

We work with these groups because they represent the pharmaceutical industry and business community in debates led by governments and other stakeholders, and because they help the industry reach consensus on policy issues.

When our trade associations actively lobby on our core business issues, we seek to align their positions with our own. There are times, however, when we may not share the views of our peers or associations—both on issues that are central to our business and on those that, while important, are not directly material to our mission. With representatives on the boards and committees of industry groups and trade associations, we can voice questions or concerns we may have about policy or related activities. We may even recuse ourselves from related trade association or industry group activities when appropriate.

GRI G4-16

Our executive vice president and general counsel sends an annual report to our company's Board of Directors on trade association dues greater than $25,000 that were spent in the previous year on lobbying and political activity in the U.S. The Governance, Public Policy and Corporate Responsibility Committee of the Board of Directors has ongoing oversight of the company's membership in trade associations and grassroots lobbying activities.

For a list of industry and trade groups of which we are a member, and our trade association dues (those greater than

$25,000), that are used for political purposes, please click here.

Through our top-three trade associations (listed below), we engaged on the following policy issues in 2015:

- **Pharmaceutical Research and Manufacturers of America (PhRMA)**: Protecting incentives for innovation, defense of Medicare Part D; implementation of the Affordable Care Act; Patent Reform; and the Trans-Pacific Partnership
- **U.S. Chamber of Commerce**: Defense of Medicare Part D; corporate tax reform; the Trans-Pacific Partnership; and Trade Promotion Authority
- **Biotechnology Industry Organization (BIO)**: Protecting incentives for innovation; defense of Medicare Part D; Patent Reform; and the Trans-Pacific Partnership

Our rich history of discovery and innovation began 125 years ago and continues today.

Through the years, our researchers have helped to find new ways to treat and prevent illness in people and animals around the world. We've done great things in the past. Today, we're doing great things for the future.

Our company is an innovative, global health care leader that is committed to improving health and well-being around the world.

Our company has more than 50 prescription products in key therapeutic areas such as cardiovascular disease, respiratory disease, oncology, neuroscience, infectious disease, immunology and women's health.

GRI G4-4

GRI G4-8

Our core product categories include diabetes, cancer, vaccines and hospital acute care. We continue to focus our research on conditions that represent some of today's most significant health challenges—like cancer, hepatitis C, cardio-metabolic disease, antibiotic-resistant infection and Alzheimer's disease, and we are on the front lines in the fight against emerging global pandemics, such as ebola.

We also devote extensive time and energy to increasing access to medicines and vaccines through far-reaching programs that donate and deliver our products to the people who need them.

We're applying our global reach, financial strength and scientific excellence to do more of what we're passionate about: improving health and improving lives.

PRESCRIPTION PRODUCTS AND PRESCRIBING INFORMATION

Our core business is the discovery and development of prescription medicines for diseases and conditions that impact millions of people.

We invest billions of research dollars to find medicines that can help improve lives. Today, our company has more than 50 prescription products in key therapeutic areas such as cardiovascular disease, respiratory disease, oncology, neuroscience, infectious disease, immunology and women's health.

To learn more, click here.

VACCINES

Vaccines are one of the greatest public health success stories in history, and our company has played its part in that story.

We are dedicated to the complex business of researching and producing vaccines. Our unique vaccines have helped prevent a number of diseases, including ones never thought preventable. To learn more, click here.

ANIMAL HEALTH

Through our company's animal health business, we are a global leader in the research, development, manufacturing and sale of veterinary medicines.

We offer a broad choice of vaccines, anti-infective and antiparasitic drugs, a complete range of fertility management products, pharmaceutical specialty products, innovative delivery solutions, performance technologies, and value-added programs, such as pet recovery services and livestock data management tools. Learn more about our Animal Health business.*

PRODUCTS

With a steady focus on innovation and sound science, we work to deliver vaccines, medications, and consumer and animal health products that can help millions around the world. View a list of products marketed in the U.S.

PIPELINE

Our pipeline provides an overview of our late-stage clinical development programs and is updated quarterly. Explore our pipeline.

SENIOR LEADERSHIP

Kenneth C. Frazier, chairman of the board, president and chief executive officer
Robert M. Davis, executive vice president and chief financial officer

View the list of Executive Committee members.

NAME

The company, Merck & Co., Inc., Kenilworth, N.J., USA, is known as MSD outside the United States and Canada and is listed on the New York Stock Exchange under the symbol "MRK."

* The website listed above may refer to products that either are not available in your country or are marketed under a different trade name. In addition, the safety and efficacy data and the withholding periods for a specific product may be different depending on local regulations. Please consult your veterinarian for more information.

OUR BUSINESS

ECONOMIC IMPACT

Long-term business success depends on making relevant, quality products through sustainable and ethical practices.

Globalization and the expanding reach of firms during the past decade have escalated expectations that multinational enterprises will create more social value, beyond just regulatory compliance and philanthropic contributions. Corporate responsibility has evolved to be an important element of the private sector's response to these expectations.

While it can be seen as a way to improve one's reputation, or simply as a response to a moral imperative to do good, we believe that corporate responsibility is critical to our business success and can provide us with new opportunities to create shared value. Our principal economic contribution to society is made through the discovery, development, manufacturing and marketing of our products, which directly improve and maintain the health of individuals and communities around the world, helping them to lead more productive lives.

For additional information about our business and economic performance, please see our Form 10-K for the year ended December 31, 2015.

GRI G4-9

2015 REVENUES BY GEOGRAPHIC REGION (IN BILLIONS)

U.S.: 44%

Europe, Middle East #fsnlt;br#fsngt;and Africa: 27%

Asia #fsnlt;br#fsngt;Pacific: 10%

Japan: 7%

Latin America: 7%

Other: 5%

Total 2015 Revenue: $39.5

PRODUCT SALES (IN MILLIONS)

Pharmaceutical: 88%

Animal Health: 8%

Consumer Care#fsnlt;sup#fsngt;1#fsnlt;/sup#fsngt;: 0%

Other Revenues#fsnlt;sup#fsngt;2#fsnlt;/sup#fsngt;: 4%

Total Sales: $39,498

Financial Information

	2011	2012	2013	2014	2015
Sales (in millions)	$48,047	$47,267	$44,033	$42,237	$39,498
Research and development expenses (in millions)[1]	$8,467	$8,168	$7,503	$7,180	$6,704
Number of employees	86,000	83,000	77,000	70,000	68,000
Number of stockholders of record	166,100	157,400	149,400	142,000	135,500
Annual cash dividend paid per share	$1.56	$1.69	$1.73	$1.77	$1.81
Global tax expense as reported on income statement (in millions)	$942	$2,440	$1,028	$5,349	$942

[1] Excludes restructuring and merger-related expenses

OUR BUSINESS

SUPPORTING OUR COMMUNITIES

Our company contributes substantial economic and social value to the countries and local communities in which we operate.

As of December 31, 2015, Merck & Co. Inc., Kenilworth, N.J., USA (including its Banyu subsidiary in Japan), had a physical presence in 76 countries, with 404 active (occupied) research, manufacturing, sales and administrative sites. In all of these locations, we recognize that our success depends in large part on our relationships and interactions with local communities, including elected officials, business and community leaders, charitable organizations, neighbors, educators, local media and our own employees.

We have a presence in 76 countries, with 404 active research, manufacturing, sales and administrative sites.

We aspire to having a positive effect on the communities in which we operate worldwide, and we recognize our responsibility toward those affected directly or indirectly by our operations and activities. We rely on local communities not only for our workforce, but also for some of our suppliers and for our ability to do business. Through ongoing engagement and dialogue, we work to understand the concerns and needs of our communities, and we seek to respond by addressing local challenges in ways that build stronger communities and support the sustainability of our business.

GRI G4-EC7

We contribute to our communities in three key ways:

- Making direct and indirect economic contributions, such as employment, training, support of local suppliers and local R&D, and paying taxes
- Managing our community impact—for example, by ensuring confidence in our environmental and safety performance and by respecting human rights
- Addressing community needs through philanthropy, social investments and community involvement

Underlying our community approach is our commitment to respecting human rights. As a signatory to the United Nations Global Compact, we are committed to protecting and promoting fundamental human rights not only within our immediate workforce but also within our broader sphere of influence, including our local communities. Learn more about our commitment to protecting and promoting fundamental human rights.

COMMUNITY ENGAGEMENT

Our community engagement programs reflect the priorities that we share with the local community. Our signature Neighbor of Choice (NOC) program is designed to help build strong and vibrant communities by promoting a healthier society and preserving the environment in localities where we have a major site presence. The program provides financial support and enables our employees to contribute to the well-being of their communities.

Established in the 1990s, our NOC program helps to build relationships of trust and support with these local organizations and residents by responding to needs identified by the communities themselves. We take seriously the shared responsibility of helping to improve the quality of life of neighbors in need. Learn more.

OUR APPROACH

ABOUT THIS REPORT

As part of our commitment to being transparent about our corporate responsibility initiatives, including our business activities and operations, we publish an annual Corporate Responsibility Report.

GRI G4-18

In this 2015/2016 Corporate Responsibility Report, all of the quantitative data covers the calendar year from January 1 to December 31, 2015, unless otherwise noted. To ensure that readers have the most up-to-date information, some of the narrative in the report is about decisions and initiatives that took place in early 2016. Our 2014 Corporate Responsibility Report was published in September 2015. We also regularly report updated information about our transparency initiatives and performance here.

We use several external guidelines and measurement frameworks to inform the scope of our reporting. These include the Global Reporting Initiative (GRI), the Access to Medicine Index, the UN Sustainable Development Goals and the 10 principles of the UN Global Compact. We also have completed a materiality analysis, which represents the issues that internal and external stakeholders have identified as having significant financial, operational or reputational impact on the company, and illustrates where our company can have a significant impact on society and the environment.

GRI G4-13

GRI G4-17

GRI G4-23

This report covers our company's global operations, including those of subsidiaries, unless stated otherwise. It includes activities at all facilities, owned and leased, over which we have operational control, unless otherwise noted. The basis for reporting on other matters specific to the operations of our business—including joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can affect comparability from period to period—can be found in our 2015 Form 10-K, which is filed with the United States Securities and Exchange Commission and is also available in the "Financial Reports" section of our corporate headquarters' website.

There have been no significant changes from previous reporting periods in the scope, boundary or measurement methods applied in this report. Acquisitions and divestitures are thoroughly discussed in our 2015 Form 10-K.

We have sought to provide a comprehensive view of how our company operates, and have focused on what is most important to our business success as well as to our external stakeholders. Wherever possible, we have guided readers to sources of more information, including our corporate headquarters' website and our annual finance reports. We plan to publish our next comprehensive corporate responsibility report in 2017.

OUR APPROACH

AWARDS & RECOGNITION

Over the years, we have received numerous awards and recognition for our comprehensive approach to corporate responsibility. The following is a selection of awards and recognition received throughout 2015 and 2016.

GLOBAL RECOGNITION

Access to Medicine Index
We ranked number 7 on the 2014 Access to Medicine Index. The Index, published every two years, provides an independent assessment of the efforts of research-based pharmaceutical companies to improve access in developing countries. (November 2014)

Calvert Investments
Using an in-depth methodology, Calvert examines diversity policies, programs and performance; identifies the leaders and laggards; and provides recommendations to help companies identify and remedy operational gaps. Based on the diversity criteria in the Calvert report, our company ranked among the 10 highest-rated companies overall in the Calvert Investments 2015 survey. (March 2015)

CECP (Committee Encouraging Corporate Philanthropy)
Our chairman and CEO, Kenneth C. Frazier, was recognized as being a “Force for Good” by CECP, a global nonprofit organization and coalition of CEOs who believe societal improvement is an essential measure of business performance. Mr. Frazier was honored for his “focus on a long-term commitment to innovative research and development as well as business and humanitarian initiatives to improve global health.” (February 2015)

Corporate Responsibility Magazine
We placed number 42 in *Corporate Responsibility*’s 17th annual “100 Best Corporate Citizens” list, recognizing public companies across the U.S. for outstanding corporate responsibility performances in 2015. The magazine also ranked our company number 3 in the “Best Corporate Citizens: Employee Relations” category, based on our performance related to diversity and inclusion and to employee benefits. (April 2016)

eHealthcare Leadership
The Manuals are one of the world’s most widely used medical information resources. *The Manuals’* professional and consumer websites received five eHealthcare Leadership Awards during the 19th Annual Healthcare Internet Conference. *The Manuals* have committed to making the best current medical information accessible by up to 3 billion health care professionals and patients on every continent by 2020. (December 2015)

Fortune
Our company was ranked number 5 within the pharmaceutical industry in *Fortune* magazine’s 2016 list of the “World’s Most

Admired Companies." (February 2016)

FTSE4Good Index
Our company remains a constituent of the FTSE4Good Index. The FTSE4Good Index series measures the performance of companies that meet globally recognized corporate responsibility standards. We have been a part of this leading index since 2008. (June 2016)

Global Leaders Council for Reproductive Health
MSD for Mothers' collaboration with the Bill & Melinda Gates Foundation and IntraHealth received the Resolve Award for Service Delivery from the Global Leaders Council for Reproductive Health. The award was given in recognition of innovative and scalable health care service–delivery methods implemented in Senegal, West Africa. (March 2015)

IAOP (The Association with Collaboration at its Core)
Our Externalization Center of Excellence (CoE) team was honored by IAOP as one of two winners of the sixth annual "Global Excellence in Outsourcing" award in the "Best Practices" category for the development of a CoE that contributed to the realization of 25–30 percent savings over the respective contractual term (typically 3–5-year contract terms). (February 2016)

InformationWeek
For the third year in a row, our company has made the ranks of *InformationWeek*'s "Elite 100" companies, ranking number 74 on the 2016 list. The *InformationWeek* Elite 100 tracks the IT practices of the nation's most innovative organizations and examines the business practices of these firms across core areas of operations, including technology deployment, IT budgets, business technology infrastructure and strategies. (February 2016)

MSCI Global Sustainability Index Series
We are a top 10 constituent of MSCI Inc., a leading provider of global benchmark indexes that has over 500 equity and fixed-income environmental, social, and governance (ESG) indexes. The family of MSCI Global Sustainability Indexes includes the MSCI World ESG Index, the MSCI EM ESG Index and the MSCI ACWI ESG Index. (May 2016)

Pet's & Vet's Packaging Forum
Our Animal Health business in France was given the "Packaging Innovation" award in the veterinary products category by the Pet's & Vet's Packaging Forum for our anti-inflammatory for cattle, FINADYNE® Transdermal (flunixin meglumine). The award was established in 2014 to encourage innovative achievements in packaging, veterinary drugs and devices. Our company was recognized for the innovative capacity of our research and for our commitment to supporting treatment adherence by providing veterinarians with the most suitable and practical delivery devices. (February 2015)

Premier Inc.
We were among five companies honored by Premier Inc. with a 2016 "Continuum of Care" award for excellence in supporting Premier's alliance members. Premier is a leading health care improvement company whose members include approximately 3,600 U.S. hospitals and 120,000 other providers. Our company was recognized for the outstanding sales and services support it provides to the many physician practices and other vaccine users around the country. We were the only award recipient in the biopharma supplier category, and the only health care company. (June 2016)

STOXX® Global ESG Leaders
We are a component of the STOXX® Global ESG Leaders indices—an innovative series of environmental, social and governance (ESG) equity indices that are based on a completely transparent selection process. (May 2016)

U.S. News and World Report
The HMR Diet, developed by HMR Weight Management Services, a subsidiary of Merck & Co., Inc., Kenilworth, N.J., USA, earned the number 1 spot as the "Best Fast Weight-Loss Diet" in *U.S. News & World Report*'s list of "Best Diets of 2016." HMR also held its position as the number 2 "Best Weight-Loss Diet" in the annual list for the second year in a row. (January 2016)

***VOCÊ* Magazine**
Our Animal Health business was named to *VOCÊ* magazine's 2015 list of "Top 150 Companies to Work for in Brazil"—claiming the number 1 spot in the animal health category. In addition, a panel of executives rated the subsidiary one of the most admired companies in this priority market. This is the second year in a row in which our Animal Health team has received top placement, having come in first in the overall health care category in 2014. MSD (Human Health) in Brazil also made the 2015 list in the pharmaceutical category. *Você S/A* is the leading human resources publication in Brazil. (November 2015)

ACCESS TO HEALTH

Animal Pharm
Our Animal Health business won the “Best New Product–Companion Animals” and “Best Pipeline” categories at the Animal Pharm Awards 2015. Animal Pharm is the world’s leading online news and information service for the animal health sector. (January 2016)

Frost & Sullivan Manufacturing Leadership Council
Our company has once again been recognized in 2016 by the Manufacturing Leadership Awards as a winner in two categories: “Supply Chain Leadership,” for our Supply Chain Planning transformation initiative, and “Mobility in Manufacturing Leadership,” for our Mobility in Clean Room Manufacturing project. These awards honor organizations and individuals that are shaping the future of global manufacturing, and winning organizations are recognized for leveraging best-in-class processes, technologies and engaged teams to distinguish themselves from the competition. (February 2016)

Maternity Care Coalition
We were honored with the “Spirit of Motherhood” award by the Maternity Care Coalition for *MSD for Mothers*’ U.S. and international efforts to bring together community organizations, the scientific and medical community and others who contribute their expertise and raise awareness to reduce maternal mortality and morbidity. (February 2015)

Nobel Assembly
William C. Campbell, a retired scientist from our company’s research laboratories, was jointly named the 2015 Nobel Prize winner in Physiology or Medicine with Satoshi Omura, for the discovery of avermectin, which led to our company’s development of Mectizan®(ivermectin), a treatment for river blindness (also known as onchocerciasis) in Africa, Latin America and Yemen. They shared the prize with Youyou Tu for her discoveries concerning a novel therapy for treatment of malaria. (October 2015)

***Popular Science* Magazine**
Our company’s investigational Ebola vaccine, V920 (rVSV?G-ZEBOV-GP), received *Popular Science* magazine’s “Best of What’s New in 2015” award in the health category. Each year *Popular Science* recognizes the “Best of What’s New”—100 innovations that are brilliant, revolutionary and bound to shape the future. (November 2015)

Prix Galien USA
KEYTRUDA® (pembrolizumab) received the Prix Galien USA 2015 award for “Best Biotechnology Product.” The Prix Galien award is an internationally recognized award that identifies the pharmaceutical industry’s outstanding achievement in the development of new medicines. This latest award for KEYTRUDA® is our seventh Prix Galien USA award in nine years. (October 2015)

Society for Clinical Research Sites (SCRS)
Our Global Clinical Trial Operations team won the 2015 “Eagle” award from the Society for Clinical Research Sites, at the 2015 Global Site Solutions Summit. We were chosen from a group of 12 other finalists as the clinical trial sponsor demonstrating the strongest commitment to clinical site partnership by votes from clinical research site professionals. (October 2015)

ENVIRONMENTAL SUSTAINABILITY

CDP
In 2015, our company was awarded “Disclosure Leadership Status” by the CDP for our Climate Change Investor Report. The CDP is an international not-for-profit organization that provides a global system with which companies and cities can measure, disclose, manage and share vital environmental information. Companies voluntarily submit annual reports, and the CDP scores the reports based on transparency in disclosure and performance. Our company’s CDP scores have improved every year since 2009, with an all-time high score for our company in 2015. (November 2015)

National Environment Agency (NEA)
MSD in Singapore was among the organizations recognized by the NEA for outstanding commitment and achievements toward energy efficiency at the Energy Efficiency National Partnership Awards 2015. Our company was one of four recipients in the category of “Excellence in Energy Management.” Recipients were selected for their excellence in driving industrial energy efficiency and leveraging best practices while also achieving significant energy savings. (October 2015)

***Newsweek* Green Rankings**
We ranked number 150 on *Newsweek*’s “2016 Global 500 Green Rankings” list and number 82 on the 2016 U.S. 500 list.

The 2016 *Newsweek* rankings measure the environmental performance of large public companies using eight key performance indicators, including energy use, greenhouse gas emissions, water use and waste generation. (June 2016)

U.S. Environmental Protection Agency (EPA)
Our company received an ENERGY STAR "2016 Partner of the Year—Sustained Excellence" award from the EPA for our continued improvement in energy performance and leadership in energy management, in both the pharmaceutical and industrial sectors. Our company has been an ENERGY STAR Partner since 1995 and has been recognized by the EPA for 11 consecutive years—twice as "Partner of the Year," and now for a ninth time for "Sustained Excellence." (April 2016)

Whitehouse Council on Environmental Quality
We were recognized for both disclosing emissions and implementing greenhouse gas (GHG) targets on the White House's Federal Supplier Greenhouse Gas Management Scorecard. The scorecard was developed to encourage major federal suppliers to adopt uniform standards in line with the new aggressive efficiency standards for federal agencies. (March 2015)

EMPLOYEES

Aon Hewitt and LinkedIn
For the second consecutive year, MSD in China was awarded the Aon Hewitt "Best Employer" award for 2016. Award winners were chosen from among 108 domestic and multinational candidate companies from 11 industries operating in 192 Chinese cities. Each candidate company was evaluated on four indicators: "Compelling Employer Brand," "High Employee Engagement," "Effective Leadership" and "High Performance Culture." (April 2016)

***Black Enterprise* Magazine**
We were named to *Black Enterprise*'s "40 Best Companies for Diversity" list for 2015. Our company was singled out for our commitment to diversity in senior management and on our Board of Directors. We were the only pharmaceutical company to make the list. (October 2015)

***Business Insider* Magazine**
We ranked number 50 on *Business Insider*'s list of the best companies to work for in America. (April 2015)

***CAREERS & the disABLED* Magazine**
We were ranked number 33 on the "Readers' Choice 2016 Top 50 Employers" list by *CAREERS & the disABLED* magazine, the nation's first and only career-guidance and recruitment magazine for people with disabilities. The list honors corporations for creating a progressive environment for people with disabilities, as reported by readers of the magazine. (March 2016)

DiversityInc
We were recognized for the 14th consecutive year as one of the "Top 50 Companies for Diversity" by DiversityInc, ranking number 17 in 2016. (April 2016)

***Equal Opportunity* Magazine**
Our company ranked number 19 in the 22nd annual "Top 50 Employers 2016 Readers Choice Awards" in *Equal Opportunity* magazine. Readers selected the top companies in the country for which they would most prefer to work or that they believed would provide a positive working environment for members of minority groups. (March 2016)

Executive Leadership Council (ELC)
Our chairman and CEO, Kenneth C. Frazier, was honored by the ELC at its 2015 Recognition Gala. Mr. Frazier accepted the Lifetime Achievement Award from the Executive Leadership Foundation (ELF), celebrating individuals and corporations for their support of diversity, inclusion and achievement in business. (September 2015)

Human Resources
MSD in Singapore garnered two silver awards at the 2016 Human Resources Asia Recruitment Awards event, organized by Human Resource, Asia's only regional HR media and events organization. In recognition of the staffing team's unique ability to help MSD build a world-class data science team within a year, awards were received in the categories of "Best Recruitment Innovation by a Corporate HR Team" and "Best In-house Recruitment Team." (April 2016)

***Military Times* Magazine**
Our company ranked number 50 on the *Military Times* magazine list of prestigious top 75 "Best for Vets: Employers 2016." We received this distinction for the many initiatives underway across the company to attract, select, engage and retain employees with past military service. We are the only pharmaceutical company on the list, which includes other *Fortune* 100 companies such as Verizon, Boeing, PwC and GE. (March 2016)

***Minority Engineer* Magazine**
We ranked number 17 on *Minority Engineer*'s 2016 "Readers' Choice Top 50 Employers" list. Readers were asked to name employers with whom they would most like to work or that they believed would provide a positive working environment for members of minority groups. (March 2016)

Professional Woman's Magazine
Professional Woman's Magazine once again named our company to its "Best of the Best" list of "Top Healthcare, Pharmaceutical & Biotech Companies" in 2016. The magazine polled hundreds of *Fortune* 1000 companies for its 2016 Best of the Best evaluations. It provides non-biased results that are a valuable resource for job-seekers, business owners, students, consumers, senior management, business associations, employment agencies and consumer groups. (March 2016)

PRWeek
Our company's "The Facts About Fasting During Ramadan" innovative patient-education initiative won the "Global PR Breakthrough" award at the 2015 *PRWeek* Global Awards ceremony. The award recognizes "transformative work that crosses national borders and brings a company to a new level of engagement or understanding among key stakeholders." (April 2015)

Top Employers Institute
MSD in Austria, Belgium, Germany, Italy, Spain and Switzerland were awarded "Top Employers 2016" certification by Top Employers Institute. The Institute's comprehensive independent research revealed that these MSD organizations provide exceptional employee conditions, nurture and develop talent throughout all levels of the organization and demonstrate leadership status in the HR environment, always striving to optimize employment practices and develop their employees. (February 2016)

***U.S. Veterans* Magazine**
We were listed among the companies recognized in *U.S. Veterans* magazine's 2016 evaluation of the nation's "Best of the Best Top Veteran-Friendly Companies." (May 2016)

***Working Mother* Magazine**
In 2015, our company was named to *Working Mother*'s list of the "100 Best Companies for Working Moms" for the 29th straight year. This list recognizes companies dedicated to providing employees with benefits, including career advancement, childcare, flexible work arrangements and leave for new parents. (September 2015)

ETHICS & TRANSPARENCY

Corporate Equality Index
We received a score of 100 percent in the Human Rights Campaign's 2016 Corporate Equality Index and placed on its "Best Places to Work" list in recognition of our company's commitment to global diversity and inclusion for lesbian, gay, bisexual and transgender employees. (March 2016)

CPA-Zicklin Index
We ranked in the first tier on the CPA-Zicklin Index of Corporate Political Accountability and Disclosure, which benchmarks the top 300 companies in the S&P 500 on their political-spending disclosure and oversight. (September 2015)

PHILANTHROPY

China Social Responsibility Summit
The efforts of MSD in China were recognized when it received the "Best Philanthropic Work in Corporate Responsibility" award at the China Social Responsibility Summit, held in Beijing in January 2015. The award singled out MSD for its outstanding philanthropic efforts in 2014, including the disaster relief support provided in Jiangsu and Yunnan provinces following a devastating explosion and earthquake. (January 2015)

The Chronicle of Philanthropy
We ranked number 12 on the *Chronicle of Philanthropy*'s list of the most charitable public companies in corporate America, based on cash contributions. The rankings are based on a survey of the top 150 U.S. companies in the *Fortune* 500 as well as on information from public documents filed with the IRS and the SEC. *Fortune* cited our company's focus on reducing maternal mortality and our commitment to employee volunteerism through the MSD Fellowship for Global Health. (June

2016)

Also, in its annual survey of philanthropic giving by U.S. corporations, the *Chronicle* ranked our company third in “in-kind” giving among organizations that donated more than $1 billion in products and services. (June 2016)

Pennsylvania Legal Aid Network, Inc. (PLAN)
Our company’s Pro Bono Legal Program was among the recipients of the PLAN 2015 Excellence Awards. The PLAN Excellence Awards are presented each year to individuals, groups or organizations that have demonstrated excellence and diligence in improving the availability and quality of civil legal services for low-income people and victims of domestic violence in Pennsylvania. (March 2015)

Seeding Labs
Our company received the Seeding Labs’ “Most Instrumental” award for making the most cumulative lifetime donations. During the 2016 “Positively Instrumental” event, held at the MIT Museum in Cambridge, Massachusetts, we were honored as the first company to reach Seeding Labs’ highest equipment donor level by making donations worth over $1 million. Since 2010, our company has donated more than 1,200 pieces of lab equipment, mostly from our Boston, Massachusetts, site, that have benefited universities in seven developing countries. (March 2016)

OVERVIEW

ACCESS TO HEALTH

We aspire to improve access to health by discovering, developing and providing innovative products and services that save and improve lives.

Material Topics: Anti-Counterfeiting, Bioethics, Capacity Building, Citizenship/Community Relations, Clinical Trial Ethics, Continuity of Supply, Disease Focus, Health Literacy & Adherence, Intellectual Property, Local Development, Patient Empowerment, Philanthropy, Pricing and Commercialization, Product Safety, Product Quality, R&D, Trial & Post-Trial Access, Use of Laboratory Animals

HELPING THE WORLD BE WELL

We are working to find new ways to bring our medicines and vaccines to more people around the world, and to make them as accessible and affordable as possible for those who need them. We work with local health care providers to understand product need and use, and invest in efforts to educate patients.

LEARN MORE

ACTIVELY PURSUING SOLUTIONS TO UNMET MEDICAL NEEDS THROUGH R&D

Our collaborations in R&D expand our capacity to address unmet needs in emerging markets and least-developed countries. We will continue to pursue opportunities to provide access to compound libraries and molecules to spur the development of new products, and we are committed to addressing unmet medical needs.

LEARN MORE

DISCOVERING WAYS TO HELP ALLEVIATE THE TOP GLOBAL BURDENS OF DISEASE

We believe we have a responsibility to help improve access to medicines, vaccines and quality health care worldwide, thereby helping to reduce the burden of disease in areas of the world that need it most. Toward this end, we collaborate with a variety of stakeholders to contribute our expertise and knowledge.

LEARN MORE

ACCESS TO HEALTH AT-A-GLANCE

88% TOP 20 GLOBAL BURDENS OF DISEASE ADDRESSED BY OUR PRODUCTS AND PIPELINE

MSD

MSD for mothers

Committed to Saving Lives

We have implemented differential pricing for

35 products in **121** countries

Retired scientist
WILLIAM CAMPBELL
wins Nobel Prize

ACCESS TO HEALTH AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our Access to Health efforts. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

Key Performance Indicators[1]

Research & Development	2011	2012	2013	2014	2015
Top 20 global burdens of illness addressed by our products and pipeline[2]	53%	55%	88%	88%	88%
GCP/PV audits by regulatory agencies or clinical trial investigators that led to significant fines, penalties, warning letters or product seizures	0	0	0	0	0
Established significant external licenses and collaborations[3]	52	61	40	35	64
Narrative of compounds provided to product development partnerships[4]	Online	Online	Online	Online	Online
Manufacturing & Supply					
Annual percentage of units manufactured/sold and recalled during a given year (recall rate globally)[5]	NR	0.19%	0.11%	0.22%	0.07%
Number of local and regional manufacturing partnerships to enable access[6]	NA	84	68	104	179
Number of products available by local and regional partnerships[6]	NA	34	354	499	1,157
Registration					
New product and device registrations[7,8,9]	179	204	179	176	156
Local regulatory agency GCP/PV training requests fulfilled that will help strengthen agency capabilities in agencies' GCP/PV-compliance-oversight role[10]	Online	Online	Online	Online	Online
Products submitted that have achieved WHO pre-qualification	10	10	11	11	11
Commercialization	2011	2012	2013	2014	2015
Number of our products that are supported with differential pricing[11,12,13]	NA	NA	24	35	35
Number of low- and lower-middle-income countries where inter- and/or intra-country pricing has been implemented[11,14]	NA	NA	70	114	121
Investment in patient- and provider-education programs[15] (in millions)	$97.8	$71.4	$61.3	$52.3	$80.0
Community Investment					
Healthcare workers trained through major programs and partnerships	52,000	38,000	22,000	137,000	18,669
Investment in partnerships for activities to address underlying barriers to health, such as health-system strengthening and capacity-building (in millions)	$35	$24	$24	$32	$31
People reached through our major programs and partnerships (in millions)	273	269	302	267	188

NA: Not available. NR: Not reported.

[1] Unless otherwise noted, data for the Access to Health section are reflective of our Human Health business only; information on our Animal Health business is reported separately.

[2] As defined by the Institute for Health Metrics and Evaluation (IHME).

[3] Candidates in our company's research pipeline or under regulatory review are as of February 19, 2016, as reported in the U.S. Securities and Exchange Commission for 10-K., page 16, filed on February 26, 2016. This includes candidates in Phase II or Phase III trials, or under regulatory review as of February 26, 2016. As candidates attain regulatory approval, they are removed from this pipeline view.

[4] For information on product-development partnerships, visit the "Partnerships" tab at http://www.msdresponsibility.com/access-to-health/research-development/#tab-5591a965c9e82.

[5] Beginning in 2014, this figure includes recalls within our Animal Health business.

[6] In 2014, we expanded our reporting to all of our products, including the various strengths and presentations that are sold or distributed through a partnership in local markets, to more accurately reflect our efforts to address local needs.

[7] Data include new products and new indications.

[8] Data include new products and new indications.

[9] For information on new registrations by region, visit http://www.msdresponsibility.com/access-to-health/research-development/clinical-research/#tab-5591b7745c6c4.

[10] For information on local regulatory agency GCP/PV training requests, visit http://www.msdresponsibility.com/access-to-health/research-development/clinical-research/.

[11] In 2013, we modified our key performance indicators for differential pricing so that we can more broadly capture and accurately reflect our support.

[12] Differential pricing intended to facilitate access for the at-need population.

[13] Our products include HIV treatments, vaccines and other patented products.

[14] Countries as defined by the World Bank 2013 GNI Classification, including UN-defined "least developed countries."

[15] In 2013, we refined our support to prioritize and align resources to complement our core business strategy, which resulted in an overall decrease in funding.

MECTIZAN DONATIONS

The MECTIZAN® (ivermectin) Donation Program is the longest-running disease-specific drug donation program and public-private partnership of its kind, and is widely regarded as one of the most successful public-private health collaborations in the world.

PATIENT ASSISTANCE

We believe that no one should go without the medicines or vaccines they need. More than 55 years ago, we created our first patient assistance program, to keep affordable medicine within patients' reach.

MSD FOR MOTHERS

Every 2 minutes a woman dies from complications related to pregnancy or childbirth. *MSD for Mothers* has committed $500,000,000 over 10 years to help create a world where no woman dies giving life.

FOR MORE INFORMATION ON ACCESS TO HEALTH

LEARN MORE

ACCESS TO HEALTH

OUR APPROACH TO ACCESS

Millions of people worldwide are living longer, healthier, more productive lives today thanks, in part, to better health care and access to innovative medicines and vaccines. At the same time, it is unacceptable that the vast majority of people around the world are unable to benefit from these advances in medicines and health care.

As a global health care company, we believe we have an important role and responsibility in improving access to medicines, vaccines and quality health care worldwide, thereby helping to reduce the burden of disease around the world. We also believe that expanding access is a business imperative for optimizing and sustaining our business over the long term.

We recognize the need to engage more effectively with external stakeholders to better understand their needs.

GRI G4-EC8

Barriers to quality care and medical treatment—such as a lack of trained health care professionals, weak infrastructure, civil strife and a shortage of safe water in many parts of the world—make even basic health care delivery difficult at best, and these challenges go well beyond what we can directly address alone.

We believe our role is to work in partnership with others—local communities, governments, donors, patient organizations, health care professionals, nongovernmental organizations (NGOs), multilateral organizations and others in the private sector—to contribute our expertise and knowledge.

We also have an important role to play through our public policy and outreach efforts, to advocate for changes that will improve access.

We also look at our contributions to improving health through a global population health lens. Because our medicines and vaccines target important health problems that affect millions of people on a global basis, we are—by definition—in the population health business.

Improving population health is an overarching goal for health care stakeholders: countries, payers and providers who are seeking better prevention, population health management and community interventions to protect and promote good health. Because of our unique and differentiated reach, and our science and capabilities that can be leveraged in collaboration with partners, we are able to contribute to significant population health improvements.

Our access to health strategy supports the company's overall mission to discover, develop and produce innovative products and services that save and improve lives around the world. Our mission to improve the health and wellness of people around the world by expanding access to medicines and vaccines is one of our company's five core values. To guide our efforts we follow our companywide Access to Health Statement of Guiding Principles, which articulates our approach.

RESEARCH & DEVELOPMENT

We will engage in R&D to provide medicines and vaccines that address vital global health needs. Learn more.

MANUFACTURING & SUPPLY

We are committed to providing patients and customers with high-quality products and a reliable supply of safe and effective medicines and vaccines. Learn more.

REGISTRATION

We will register our products in a timely fashion in markets where they are needed. Learn more.

COMMERCIALIZATION

We will commercialize our products in a way that develops our company's business and meets local needs in a responsible and efficient manner. Learn more.

COMMUNITY INVESTMENT

We recognize that we cannot address complex public health challenges on our own; therefore, we will engage in community investment to address the barriers to access where we believe we can make the strongest contribution. Learn more.

GRI G4-15

These Guiding Principles help us to embed policies and practices into our operations and business strategies that expand access in innovative ways and on an ongoing basis. Our Principles contributed significantly to an industrywide effort through the Business for Social Responsibility (BSR) Healthcare Working Group to develop the Guiding Principles on Access to Health care (GPAH). In 2013, we were one of 13 pharmaceutical companies to sign on to the GPAH, which provides a common framework to shape global health goals through multi-sector partnerships. In 2014, we contributed to an analysis of the Guiding Principles in action through the 2014 Status Report, and we continue to participate as a member of the BSR Healthcare Working Group to identify meaningful metrics that can help companies and other stakeholders measure their performance and the impact of the Guiding Principles on improving access to health care.

In addition, because of our leadership in this area, our Principles and key performance indicators informed the global health work of the Interfaith Center on Corporate Responsibility (ICCR) and the recent development of its Statement of Principles and Recommended Corporate Practices to Promote Global Health.

As we strive for continuous improvement in our access approach, we reevaluate our policies, practices and programs, as well as the metrics we employ to measure our progress, on an ongoing basis.

We also have a group dedicated to ensuring access to essential medicines in Africa, called the Institutional Business Africa (IBA) unit. IBA consists of a dedicated team of public health and medical specialists based across sub-Saharan Africa that fosters strategic collaborations and provides policy and technical guidance to countries focused on the areas of family planning and vaccines to achieve sustainable benefits for people and communities across the African continent. IBA is guided by four important principles, represented by the abbreviation PASS:

- **P:** Public health outcomes, guided by leading global alliances focused on reproductive health (RHSC, FP2020) and immunizations (GAVI), aligned with country public health goals
- **A:** Affordability, focusing on economic levels and optimization of available funding
- **S:** Sustainability for countries, ensuring that a long-term perspective is in place for country programs using our products
- **S:** Sustainability for our business, ensuring that we can maintain our commitment to long-term partnerships that leverage our innovative products and services

Illustrating the impact of this approach, we embarked on a six-year partnership with the Bill & Melinda Gates Foundation (the Implant Access Program) that makes available IMPLANON® (etonogestrel implant), our one-rod contraceptive implant, and IMPLANON NXT®, at an affordable access price. Since 2013, the number of IMPLANON and IMPLANON NXT implants provided in targeted countries has doubled, bringing greater choice to millions of women in some of the world's poorest regions. In recognition of the success of the program, in 2015 we announced an extension of the access pricing for an additional five years, to 2023. Additionally, through our in-country partnerships with governments focused on preventing HPV-related cervical cancer and genital warts, we continue to provide access to our vaccine GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16,18) Vaccine, Recombinant] through Gavi, the Vaccine Alliance.

In addition to these internal mechanisms, we recognized the need to engage more effectively with external stakeholders to better understand their needs in order to expand access to our products and sustain our business over the long term. Throughout 2015, we continued to develop our approach to engaging with key external stakeholders, including international funding organizations, nongovernmental organizations (NGOs), and those government aid agencies that play active roles in expanding access to medicines for patients through direct operational activities, or through advocacy on issues related to access. Our objective is to enhance our engagement in a way that is consistent with our sustainable access objectives.

Measuring how we're doing is a challenging but important component of our access strategy, as it enables us, through relevant quantitative indicators, to demonstrate our progress in implementing our Principles and to measure the effectiveness of our efforts.

Various stakeholders are also calling on the global pharmaceutical industry to provide greater transparency regarding the impact of access strategies and initiatives, as well as evidence of how access strategies are integrated into an overall business strategy. In response, we developed and report annually on key performance indicators and articulate the business case for our overall approach, as reflected in our Access to Health Guiding Principles.

There is also a need for relevant industry-specific indicators that will allow comparisons across the industry. One example is the Access to Medicine Index (ATMI), which is issued every two years and which ranked our company #7 in the 2014 Index, scoring above the mean in five of the seven technical components of the Index—General Access to Medicine Management; Pricing, Manufacturing & Distribution; Research & Development; Capacity Building; and Product Donations and Philanthropic Activities. We believe that the ATMI is one mechanism for measuring our efforts to facilitate access to health, but more work is needed to ensure that all indicators are relevant and provide true measures of corporate responsibility access efforts. Toward that end, we remain committed to working with the ATMI and other organizations to develop meaningful measurements for our company and our industry.

ACTIVE PROGRAMS

We believe we have an important role and responsibility in improving access to medicines, vaccines and quality health care worldwide, helping to reduce the burden of disease in the parts of the world that need it most.

We work in collaboration with others—local communities, governments, donors, patient organizations, health care professionals, nongovernmental organizations (NGOs), multilateral organizations and others in the private sector—to contribute our expertise and knowledge.

GRI G4-EC8

The programs highlighted on this page are examples of our ongoing efforts. For descriptions of our completed programs, including the African Comprehensive HIV/AIDS Partnerships (ACHAP), the Alliance to Reduce Disparities in Diabetes, and the GARDASIL® Access Program, please click on the “Completed Programs” tab above.

Alliance to Advance Patient-Centered Cancer Care

In 2016, our company’s Foundation announced a new initiative, the Alliance to Advance Patient-Centered Cancer Care. The Alliance aims to increase timely access to patient-centered care and reduce disparities in cancer care, especially for vulnerable and underserved adult populations in the United States. Learn more.

China-MSD HIV/AIDS Partnership

Our company's Foundation committed $36 million to establish the China-MSD HIV/AIDS Partnership (C-MAP). C-MAP was the first large-scale public–private partnership between the Chinese government and a multinational company to focus on HIV/AIDS prevention and control. Learn more.

MCAN

The Merck Childhood Asthma Network, Inc. (MCAN), a U.S.-based organization, was the only private foundation focused solely on addressing the complex and growing problem of childhood asthma within the United States. MCAN's mission was to enhance the quality of life for children with asthma and their families, and to reduce the burden of the disease on them and on society. This program concluded in 2015. Learn more.

MECTIZAN® Donation Program

The MECTIZAN®(ivermectin) Donation Program is the longest-running disease-specific drug donation program and public–private partnership of its kind, and is widely regarded as one of the most successful public-private health collaborations in the world. Learn more.

Medical Outreach Program

Our company's Medical Outreach Program was established in 1958. It is the primary mechanism through which our company donates its pharmaceuticals and vaccines for humanitarian assistance in the developing world and in support of disaster relief and emergency situations worldwide. Learn more.

MSD for Mothers

MSD for Mothers is a 10-year, $500 million initiative focused on creating a world where no woman dies giving life. Working together with committed partners, we believe we can help make pregnancy and childbirth a safe, healthy and joyful experience for women. Learn more.

U.S. Patient Assistance Programs

More than 55 years ago, our company created our first U.S. patient assistance program (PAP) to keep affordable medicines within patients' reach. Today, our patient assistance offerings include several programs. Learn more.

COMPLETED PROGRAMS

The programs highlighted on this page are examples of our past programs and initiatives.

For details on these programs, please click on the links below.

African Comprehensive HIV/AIDS Partnerships

Together with our company's Foundation and the Bill & Melinda Gates Foundation, we established the African Comprehensive HIV/AIDS Partnerships (ACHAP) in 2002 to support Botswana, a country disproportionately affected by HIV/AIDS. Learn more.

For lessons from ACHAP's contributions to the fight against HIV/AIDS in Botswana, click here.

Alliance to Reduce Disparities in Diabetes

To address the growing problem of health care disparities related to type 2 diabetes in the U.S. among low-income and underserved adult populations, our company's Foundation launched the Alliance to Reduce Disparities in Diabetes, with a commitment of $15 million. Learn more.

For a backgrounder on the Alliance to Reduce Disparities in Diabetes, click here. To see an infographic on how our Foundation is working with the Alliance to Reduce Disparities in Diabetes to bridge the gap in diabetes care, click here.

GARDASIL® Access Program

Through the GARDASIL® (Human Papillomavirus Quadrivalent [Types 6, 11, 16, 18] Vaccine, Recombinan) Access Program, we pledged to donate at least 3 million doses of GARDASIL for use in smaller-scale human papillomavirus (HPV) vaccination projects in eligible lowest-income countries around the world. Learn more.

KEY INITIATIVES

ALLIANCE TO ADVANCE PATIENT-CENTERED CANCER CARE

According to the American Cancer Society over 1.7 million people in the United States receive a cancer diagnosis each year and this number is projected to grow as the population ages.

While the past decade has marked significant advancements in cancer treatment, many cancer patients still do not receive timely, patient-centered care. Additionally, cancer care is often fragmented and poorly coordinated.

In its landmark 2013 publication, Delivering High-Quality Cancer Care: Charting a New Course for A System in Crisis, the Institute of Medicine (IOM) highlighted important gaps in the delivery of cancer care in the United States. In particular, the IOM underscored the need to strengthen patient-centered care and reduce disparities in care for underserved and vulnerable populations.

Call For Proposals: Alliance For Patient-Centered Cancer Care >

GOALS

In response to these needs, our company's Foundation announces the Alliance to Advance Patient-Centered Cancer Care (the Alliance) to improve timely access to patient-centered care and reduce disparities in care for vulnerable and underserved populations in the United States. The Foundation is committing $15 million over five years to support the Alliance and its program partners in selected communities across the country. The Alliance aims to:

- Promote evidence-based, multifaceted interventions that:
  - Improve care coordination and integration
  - Enhance patient-provider communication
  - Empower patients to actively engage in their healthcare and treatment planning
  - Offer psychosocial support and other support services
- Reduce disparities in access to high-quality cancer care for vulnerable and underserved populations
- Improve patients' satisfaction with their care and quality of life

- Build sustainable community partnerships that advance patient-centered cancer care
- Identify and disseminate best practices in patient-centered cancer care

APPROACH

The Alliance programs will:

- Strengthen patient-centered cancer care by implementing interventions in three critical areas: 1) coordination of cancer care and integration with primary care and other specialty care; 2) patient-provider communication and patient engagement in care; 3) psychosocial care and other supportive care
- Implement cross-cutting interventions that address multiple cancer types
- Integrate components at different levels of the healthcare ecosystem: 1) patient; 2) healthcare provider/healthcare team; 3) healthcare system
- Collaborate with community partners to foster sustainable programs to improve the delivery of cancer care

The Foundation will evaluate the impact of the Alliance and its programs through an independent cross-site evaluation. The evaluation findings and program results will be widely disseminated to help advance patient-centered cancer care in the United States.

KEY INITIATIVES

CHINA-MSD HIV/AIDS PARTNERSHIP

MAIN

Our company's Foundation committed $30 million over eight years (2005–2012), and an additional $6 million over three years (2014–2016), to address the growing burden of HIV/AIDS in China and help support the National HIV/AIDS Prevention and Control Action Plan.

The China-MSD HIV/AIDS Partnership (C-MAP) officially launched in 2007 in Sichuan Province as an innovative public-private partnership to advance improvements in HIV awareness and prevention, counseling and testing uptake, and treatment coverage. C-MAP was the first large-scale partnership between the Chinese government and a multinational company to focus on HIV/AIDS prevention and control.

Since 2007, C-MAP has successfully established an overall HIV prevention and treatment network in Sichuan Province. The partnership also developed an integrated disease management model and achieved significant progress in raising HIV awareness among the general public, improving HIV testing rates, improving the capacity of local health care providers, and expanding antiretroviral treatment (ART) coverage.

In its second phase (2014–2016), C-MAP is working to strengthen integrated HIV treatment capacity and coverage and to promote cooperation between the township and county health systems of Sichuan Province's Liangshan Prefecture. The program has expanded to new sites in Chongqing Municipality and Fujian Province. The partnership continues its focus on improving HIV/AIDS management and treatment services by strengthening the capacity of health care workers to support effective patient referrals and by promoting quality HIV care through health worker training in effective HIV diagnosis, treatment and disease management.

C-MAP focuses on the following key program objectives:

1. Promoting HIV counseling and testing to improve early diagnosis of HIV-positive (HIV+) patients and timely entry into care and treatment
2. Improving effective referral of newly diagnosed HIV+ patients to ART services
3. Enhancing the capacity and capability of primary health care workers to support effective patient referral and promote high-quality HIV treatment services
4. Expanding ART coverage for eligible HIV+ patients
5. Increasing patient adherence to antiretroviral treatment

PERFORMANCE

The second phase of C-MAP, launched in 2014, has achieved significant progress in treatment coverage, patient referrals and adherence, and physician training. The performance indicators below reflect aggregate data from across the Sichuan Province, Liangshan Prefecture; Chongqing Municipality; and Fujian Province.

C-MAP Phase II Metrics

	2014	2015
Investment by our company's Foundation (in millions)	$3.0	$2.5
HIV Testing, and Patient Referrals and Treatment		
Number of people who have received HIV testing and counseling	236,625	125,405
HIV test and detection efficiency ratio (percentage of new HIV+ detection among number of HIV tests)	0.07%	0.11%
Percentage and number of successful patient referrals to treatment services[1]	90.2% (5,595/6,200)	95.3% (5867/6158)
Antiretroviral Treatment (ART)		
Newly diagnosed adults who are receiving ART	3,764	4,528
HIV+ adults who are receiving ART	9,200	14,842
Newly diagnosed children who are receiving ART	31	40
Children with HIV who are receiving ART	81	129
Proportion of eligible patients receiving ART	80.9%	79%
Proportion of patients who are adherent to ART for 12 months	94.1%	95.3%
Rate of viral load suppression (viral load less than 400 copies) among patients who are adherent to ART for 12 months	74.6%	73.4%
Health Care Capacity-Building		
Physicians who received training	1,856	1,928

[1] Successful referral is defined as those patients who are referred from a testing site to an ART center and remain on treatment for at least one month.

MAIN

In the U.S. alone, there are about 50,000 new HIV infections each year, and slightly over one-third of people living with HIV are receiving in care.[1,2]

In 2012, to help address remaining barriers to HIV care, especially among underserved populations, our company's Foundation (the "Foundation"), launched the HIV Care "Collaborative" for Underserved Populations in the U.S. (the Collaborative) with the goal of connecting more people living with HIV to the care they need to stay healthy. The Foundation committed $3 million to support local health departments in Atlanta, Georgia; Houston, Texas; and Philadelphia, Pennsylvania. These are among the 28 cities with the highest HIV burden in the U.S.[3]

Research shows that when you are able to connect HIV-positive individuals with ongoing care, it not only reduces HIV risk behaviors but also reduces viral load from antiretroviral therapy (ART), all of which contributes to overall decreases in HIV transmission.[4] This is why the U.S. National HIV/AIDS Strategy (NHAS) calls for the establishment of "seamless systems to link people to care immediately after diagnosis, and support retention in care to achieve viral suppression that can maximize the benefit of early treatment and reduce transmission risk."[5] Over three and a half years, in alignment with this overall NHAS goal, the Collaborative tackled this challenge head on, working to improve access to available health care for HIV-positive people by:

- Integrating innovative, community-based approaches with local public health systems to enable timely access to high-quality HIV care for underserved adult populations
- Helping to reduce new HIV infections among populations at greatest risk
- Sharing important findings and lessons learned to further the development of innovative programs that connect people living with HIV to needed care and treatment

The Collaborative built on efforts already underway at the three program sites:

- **Atlanta/Fulton County Department of Health and Wellness:** Bridging the Gap implemented a community-based care linkage coordination and referral program for HIV-positive clients referred to, and enrolled in, the county's HIV primary care clinic.
- **Houston Department of Health and Human Services:** The Expanded Linkage to Care Initiative brought together health care providers, community groups and researchers to implement communitywide system-navigator and data-matching programs to help identify and reengage all those living with HIV who had fallen out of care.
- **The City of Philadelphia Department of Public Health:** The Engaging HIV+ Patients in Care Initiative used system navigators to help guide HIV patients through the local health care system to improve access to HIV care and management.

The George Washington University (GWU) Milken Institute School of Public Health served as the National Program Office for the HIV Care Collaborative. GWU provides overall technical assistance to each of the program sites and helped foster a "peer-learning" network among the health departments and local partners through regular meetings, site visits and forums for sharing best practices, lessons learned and key challenges. GWU also completed a cross-site evaluation of the Collaborative programs. The Collaborative concluded operations at the end of 2015.

[1] Centers for Disease Control and Prevention. "Prevalence of Diagnosed and Undiagnosed HIV Infection—United States, 2008–2012." MMWR 2015; 64:657–662.
[2] Centers for Disease Control and Prevention. "Monitoring selected national HIV prevention and care objectives by using HIV surveillance data–United States and 6 dependent areas–2014." HIV Surveillance Supplemental Report. 2015; 20(2). http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-21-4.pdf
[3] Centers for Disease Control and Prevention. HIV Surveillance Report: Diagnoses of HIV Infection in the United States and Dependent Areas, 2014; vol.26. www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-us.pdf. Published February 2015.
[4] Mugavero, MJ, Amico, KR, Horn, T, Thompson, MA. "The State of Engagement in HIV Care in the United States: From Cascade Continuum to Control." Clinical Infectious Diseases. 2013 Oct:57(8): 1164–71.
[5] The White House Office of National AIDS Policy. "National HIV/AIDS Strategy for the United States: Updated to 2020," July 2015. www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf.

PERFORMANCE

The Foundation worked with George Washington University (GWU) Milken Institute School of Public Health to conduct a three-and-a-half-year (2012–2015) cross-site evaluation of the HIV Care "Collaborative" (the Collaborative) programs.

A cohort of newly identified and previously lost-to-care HIV-positive adults were enrolled in a medical care linkage and engagement intervention that deployed community health workers in public health settings. The cohort's medical care utilization was followed over time to assess clinical outcomes and process measures associated with the Collaborative.

Previously designed client-level data systems were used to track patient characteristics, service utilization, quality of care and clinical outcomes. Client-level data systems include electronic health records and administrative databases designed to document federally funded health and support services utilization, processes and clinical outcomes.

The results of the evaluation provide an overview of enrollment and outcome measures for clients who were enrolled in the Collaborative intervention across the three program sites. From January 2013 through June 2015, 1,340 HIV-positive adults were enrolled in the Collaborative for linkage to HIV medical care and patient navigation services provided by community health workers for an average of three months. The Collaborative sites enrolled participants on a rolling basis since the program was first implemented in January 2013. Enrollment was ongoing through June 30, 2015. Note that the data below are not site-specific, but rather were aggregated across the three program sites (Fulton County, City of Houston, City of Philadelphia).

New Report - *Partners in Care: Foundation HIV Care Collaborative* >

Among Collaborative clients,15 percent were newly identified HIV-positive adults, 76 percent were HIV-positive adults who had previously dropped out of medical care, 6 percent were at high risk for dropping out of medical care due to frequent broken or cancelled appointments, and 4 percent had unknown status as they had not completed an initial assessment before being lost to care. Almost one-third of clients had AIDS upon enrollment in the Collaborative.

Among the clients enrolled by the Collaborative between January 1, 2013, and June 30, 2015, 78 percent were successfully linked to medical care through the Collaborative intervention. Among clients linked to care, 69 percent were linked within

the three-month target period set by the Common Core Indicators of the U.S. Department of Health and Human Services (HHS) for HHS-funded HIV programs and services. Barriers to timely linkage to care included: limited or no access to a telephone, employment in a job that did not offer medical leave, incarceration, paperwork required to become eligible for free medical care, and lack of transportation to clinic appointments. One of the Collaborative sites also had a substantial waiting time for a first medical appointment, which delayed completion of the linkage process.

Among Collaborative clients enrolled from January 1, 2013, through June 30, 2015, and then followed for six months: 57 percent were retained in medical care for at least six months after their first medical visit, 57 percent were prescribed antiretroviral (ARV) therapy, and 68 percent achieved HIV viral suppression.

Patient Process Measures to Assess Linkage to HIV Medical Care	Mean Linkage Rates (Low-High Ranges)
HIV+ adults enrolled in the Collaborative who were linked to care[1]	78% (76%–86%)
HIV+ adults enrolled in the Collaborative who were linked to care within three months of enrollment in the Collaborative[2]	69% (28%–92%)

[1] Clients were enrolled on a rolling basis in the Collaborative intervention from January 1, 2013, through June 30, 2015, and followed for six months after enrollment to calculate process and outcome measures. Adults were 18 years of age or older and newly identified as HIV+ at the Collaborative sites, or another HIV-counseling and testing site that referred the individual to the Collaborative site for linkage to care and patient navigation services. Includes newly identified HIV+ individuals, those individuals that had dropped out of care, and individuals that were identified by the Collaborative site as being at risk for dropping out of care due to high rates of broken or cancelled appointments. Linkage to care was defined as one or more medical visits following enrollment in the Collaborative.
[2] Common Core Indicators were adopted by the U.S. HHS in 2012 for use in assessing HHS-funded HIV programs conducting linkage to medical care for HIV+ individuals. The numerator is the number of persons who attended a routine HIV medical care visit within three months of HIV diagnosis. The denominator is the number of persons with an HIV diagnosis in the 12-month measurement period. The Common Core Indicators were adapted for use in evaluating the Collaborative as no Common Core Measure was adopted by HHS for use in evaluating programs relinking HIV+ individuals to care.

Objectively Measured Patient Process and Quality of Care Measures[1,2]	Mean Rates (Low-High Ranges)
Six-month retention rate of HIV+ adults in the observation period[3]	57% (44%–70%)
Six-month rate of HIV+ adults prescribed HIV antiretroviral (ARV) therapy[4]	67% (53%–82%)
Prescribed ARVs in the observation period	57% (1%–82%)

[1] Objectively measured patient process and clinical outcomes data were gathered from the health records of clients enrolled in the Collaborative between January 1, 2013, and June 30, 2015, and followed in health records for at least six months. Quality measures adopted by the Collaborative are based on measures established by the federal Health Resources and Services Administration (HRSA) HIV/AIDS Bureau (HAB), which can be found at: http://hab.hrsa.gov/deliverhivaidscare/coremeasures.pdf.
[2] Information from Collaborative clients' health records was reported for the six-month period following completion of the Collaborative intervention. The denominator used to calculate the rates excluded clients who did not complete or were lost to follow-up during the Collaborative intervention, those who were deceased or incarcerated, and those who had moved out of the area served by the participating sites.
[3] The numerator is defined as clients who had at least one medical visit in the six months following completion of the Collaborative intervention.
[4] The numerator is defined as the number of clients who were prescribed HIV antiretroviral medication in the six months following completion of the Collaborative intervention. HIV antiretroviral therapy consists of any combination of HIV medications, other than the regimens or components identified as not recommended at any time by the Panel on ARV Guidelines for Adults and Adolescents. Guidelines for the use of ARV agents in HIV-1-infected adults and adolescents. DHHS. Available at: http://aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf

Objectively Measured Patient Outcomes[1,2]	Mean Rate (Low-High Ranges)
Twelve-month rate of HIV+ adults with HIV viral suppression in the observation period.[3]	68% (57%–78%)

[1] Objectively measured patient process and clinical outcomes data were gathered from the health records of clients enrolled in the Collaborative between January 1, 2013, and June 30, 2015, and followed in health records for at least six months. Quality measures adopted by the Collaborative are based on measures established by the federal Health Resources and Services Administration (HRSA) HIV/AIDS Bureau (HAB), which can be found at: http://hab.hrsa.gov/deliverhivaidscare/habperformmeasures.html.
[2] Information from Collaborative clients' health records was reported for the six-month period following completion of the Collaborative intervention. The denominator used to calculate the rates excluded clients who did not complete or were lost to follow-up during the Collaborative intervention, deceased, incarcerated or moved out of the area served by the participating sites. Only data from the Fulton County Health and Wellness Department and City of Philadelphia were included in the analysis, as complete clinical data were not available to the City of Houston.
[3] The numerator is defined as the number of clients with an HIV viral load less than 200 copies/mL at least once in the observation period.

MAIN

The Merck Childhood Asthma Network, Inc. (MCAN), a U.S.-based, nonprofit 501(c)(3) organization, was established in 2005 as the only private foundation focused solely on addressing the complex and growing problem of childhood asthma in the United States.

Funded by our company's Foundation, MCAN's mission was to enhance the quality of life for children with asthma and their families, and to reduce the burden of the disease on them and society.

Led by Floyd Malveaux, M.D., Ph.D., a nationally recognized expert in asthma and allergic diseases, dean emeritus of the College of Medicine, and professor of microbiology and medicine at Howard University, MCAN funded the implementation of projects in varied settings to improve high quality asthma care for children. During its tenure, MCAN granted more than $20 million to programs set in some of the nation's most impoverished, at-risk communities to study the impact of evidence-based interventions on symptoms and the emergent/urgent care use of children living with asthma.

The Foundation committed $41.1 million to support MCAN over 11 years (2005–2015). The investment in MCAN was $2.8 million in 2014 and $2 million in 2015.

IMPACT (2005-2015)

- Fostered major advances in understanding the characteristics and challenges of effective community-level care and best practices for implementation
- Helped bring together leading organizations with a strong interest in childhood asthma
- Identified and successfully advocated for major public policy changes that were needed for improved asthma care

MCAN concluded operations in 2015, but leaves a legacy of experience that can be adapted and implemented by others providing services to at-risk populations. Its success in identifying barriers and facilitators in implementing effective asthma programs has valuable implications for the potential management of other chronic diseases. The MCAN 10-Year Impact Report, *Translating Evidence into Practice*, shares the work and outcomes of its programs and initiatives and the key impact highlights of MCAN's work from 2005 to 2015. In addition, MCAN resources, implementation guides, publications and other tools are available in the MCAN library.

PROGRAMS

Through the Care Coordination grant portfolio, MCAN studied the feasibility and effectiveness of implementing and sustaining care-coordination models developed during MCAN Phase I in communities with significant childhood-asthma morbidity and/or disparities in outcomes.

Care Coordination program sites participated in a cross-site evaluation to assess outcome and process measures focused on care coordination and clinical outcomes. Preliminary findings from the evaluation indicate that the percentage of participants with “not well controlled” asthma decreased from 49 percent at baseline to 18 percent at 12-month follow-up. Final results were presented at the 2015 American Thoracic Society International Conference in May 2015.

MCAN CARE COORDINATION PROGRAM SITES (2010–2014)

Los Angeles Unified School District, “YES WE CAN Children’s Asthma Program”
This program used a care-coordination and education model that extends beyond the immediate school clinic to foster systemic changes among health, educational and community settings. The program triaged students and families into appropriate levels of intervention, aimed to improve the coordination of care among schools, clinics and community providers, and focused on measuring symptom reductions and school days missed. The program was successful in reducing days of school missed due to asthma from approximately 13 days to five days a year.

University of Illinois at Chicago School of Public Health, “Addressing Asthma in Englewood”
This program centered on a community-educator model, linking children with asthma to appropriate services, community groups and local agencies. A home-visit case-management program was also provided to enhance asthma education and to identify and mitigate asthma triggers. Among the participants who completed the case-management program, emergency room visits for asthma decreased from 40 percent to 27 percent over 12 months.

RAND Corporation and University of Puerto Rico, “La Red de Asma Infantil de MSD de Puerto Rico”
This program carried out evidence-based interventions as part of an asthma care coordination program across home, health care and community settings. Implemented in a federally qualified health center (FQHC) in San Juan, Puerto Rico, “La Red” aimed to promote asthma-friendly communities throughout the island of Puerto Rico and improve access to quality asthma health care for this highly vulnerable and underserved community. After participating in La Red, the percentage of families who reported an asthma-related emergency department visit in the past 12 months decreased from 67.1 percent to 39.1 percent.

Children’s Hospital of Philadelphia, “Asthma Healthcare Navigator Program”
This program deployed asthma health care navigators in four primary care centers operated by the hospital to work with primary care providers as integral members of the families’ asthma care teams. They helped families identify and reduce asthma triggers in the home, as well as providing self-management education and other resources for families of high-risk children with asthma. Over 12 months, caregivers reported a significant reduction in the number of days their child with asthma used rescue medications over a two-week period (from 5.87 days at baseline to 2.74 days at follow-up).

COMMUNITY HEALTHCARE FOR ASTHMA MANAGEMENT AND THE PREVENTION OF SYMPTOMS (CHAMPS)

CHAMPS is an innovative translational research- and community-based clinical partnership funded by MCAN and led by the Milken Institute School of Public Health at the George Washington University. Additional partners include Rho, Inc., and the RCHN Community Health Foundation. The project is designed to demonstrate how tailored, evidence-based asthma

management programs that have been proven efficacious in randomized, controlled trials can be implemented in FQHCs, where many low-income children and families receive care. Community health centers participating in the CHAMPS program include El Rio Community Health Center (Tucson, Arizona), Cherry Street Health Services (Grand Rapids, Michigan), and Costa Salud Community Health Center (Rincón, Puerto Rico).

CHAMPS has concluded final data collection and is presenting results of the study at the 2016 American Academy of Asthma Allergy & Immunology Annual Meeting. In addition, a comprehensive, interactive implementation guide for the CHAMPS intervention is available on EPA's website for community-based asthma management programs.

HEAD-OFF ENVIRONMENTAL ASTHMA IN LOUISIANA (HEAL), PHASE II

With support from MCAN, HEAL, Phase II, built upon the lessons learned from the Head-off Environmental Asthma in Louisiana (HEAL) project, a post-Katrina research initiative that studied the effects of mold and other indoor allergens on children with moderate-to-severe asthma. HEAL identified the challenges and effectiveness of implementing a multifaceted intervention in asthma case management and of environmental mitigation designed to help improve the health outcomes of children with asthma.

In HEAL, Phase II, the Xavier University of Louisiana Center for Minority Health & Health Disparities Research and Education, the Daughters of Charity Services of New Orleans, and the Children's Health Fund worked together to disseminate and implement a multifaceted intervention in existing health care systems. They provided individualized counseling by certified asthma educators and community health workers who made home visits to families of children with poorly controlled asthma. The asthma educators provided tailored counseling for children with asthma ages 2–18 and their families to improve asthma management, avoid exposure to asthma triggers and reduce the occurrence of symptoms. Preliminary results from HEAL, Phase II, indicate that, among the affected children, those with uncontrolled asthma decreased from 71 percent at baseline to 38 percent at the 12-month follow-up.

NATIONAL AMBULATORY MEDICAL CARE SURVEY (NAMCS)

The National Ambulatory Medical Care Survey (NAMCS) is a national survey of physicians designed to increase understanding of how care is being delivered in providers' offices. MCAN, the National Institutes of Health (NHLBI, NICHD, NIEHS, NIAID), the Centers for Disease Control and Prevention (NCEH, NIOSH, NCHS), the U.S. Environmental Protection Agency (EPA), and the Agency for Healthcare Research and Quality provided support and expertise to help develop specific questions for the 2012 NAMCS, that focused on the NAEPP asthma guidelines and their use.

The 2012 survey, whose findings are still being analyzed, will evaluate the implementation of the NAEPP guidelines from the health care providers' perspective and help in identifying barriers to the uptake of critical elements of guideline-based management of asthma. These findings can inform ongoing strategies to increase effective implementation of the NIH guidelines.

PUBLIC POLICY

MCAN partnered with the Milken Institute School of Public Health at the George Washington University and First Focus to establish the Childhood Asthma Leadership Coalition (CALC), the only national multi-sector coalition dedicated to improving policymaking that addresses

childhood asthma.

Since its inception in June 2012, CALC has grown to more than 20 leading organizations representing a range of expertise in childhood asthma, public health, environmental health, poverty, housing, health care, and health care economics.

Under the guidance of its members, CALC has focused on advancing Medicaid policies that directly impact access to care for low-income children with asthma; educating stakeholders on opportunities available under the Patient Protection and Affordable Care Act (ACA); protecting federal funding for childhood-asthma-related programs; and examining current gaps in asthma research and opportunities to foster translational research that brings effective interventions from the research bench to the bedside the community.

Among the most important CALC successes is its advocacy in support of two Medicaid policy changes: withdrawal of the "free care" rule and reimbursement for preventive services provided by practitioners other than licensed providers. Although MCAN funding has concluded, CALC is continuing federal and state-based advocacy activities on behalf of children with asthma in 2016 and beyond.

PERFORMANCE

Demographics of Participants Enrolled in MCAN's Translational Research Projects

	Care Coordination	HEAL, Phase II	CHAMPS
Patients enrolled through 2014	805	222	314
Age (mean years)	7.1	9.0	7.8
Gender			
Male	60%	55%	61%
Race/Ethnicity			
Black	50.6%	84%	9%
Hispanic[1]	42.3%	10%	83%
White	1.8%	9%	6%
Other (Asian, Native American, Hispanic, Mixed)	5.4%	7%	2%

[1] Hispanic: Not a mutually exclusive category

Preliminary Clinical Characteristics of MCAN Project Participants at Baseline and 12 months

Characteristic/ Variable	Care Coordination: Baseline[1] [N=805]	Care Coordination: 12-Month Follow-Up[1] [N=805]	HEAL, Phase II: Baseline [N=222]	HEAL, Phase II: 12-Month Follow-Up [N=187]	CHAMPS: Baseline [N=314]	CHAMPS: 12-Month Follow-Up [N=301]
Missed school days, past year (mean)[2,3]	11.3	4.06	1.4	0.5	1.5	0.6
Limited activities, past month (mean)	6.27	1.92	-	-	4.7	1.6
Nighttime awakenings, past month (mean)	6.55	2.02	-	-	4.7	1.1
Emergency room visits, past year[4,5]	2.86	1.09	41%	22%	5.9	0.6
Hospitalizations, past year[6,7]	1.11	0.36	10%	5%	0.3	0.03
Daytime symptoms within the past 2 weeks	7.38	3.13	7.9	5.0	8.7	2.7
Use of rescue medication within the past 2 weeks[8,9]	5.73	2.01	55%	45%	8.2	2.0

[1] Care Coordination data are for individuals who had baseline and follow-up outcomes.
[2] The HEAL, Phase II, figure is for the past three months.
[3] The CHAMPS figure is for the past month.
[4] The Care Coordination and CHAMPS figures are mean numbers of visits.
[5] The HEAL, Phase II, figure is the percentage of participants who reported that they had an ER visit within past year.
[6] The Care Coordination and CHAMPS figures are mean numbers of hospitalizations.
[7] The HEAL, Phase II, figure is the percentage of participants who reported that they had a hospitalization within the past year.
[8] The Care Coordination and CHAMPS figures are mean number of days using rescue medication within the past two weeks.
[9] The HEAL, Phase II, figure is the percentage of participants who reported that they used their rescue medication within the past two weeks.

KEY INITIATIVES

MECTIZAN DONATION PROGRAM

MAIN

One of the most significant initiatives undertaken by our company to help improve access to medicines in developing countries is the MECTIZAN® (ivermectin) Donation Program.

In 1987, we announced that we would donate MECTIZAN, our medicine for the treatment of onchocerciasis, to all who needed it, for as long as needed.

To facilitate the donation and delivery of MECTIZAN, we established a multi-sectoral partnership involving the World Health Organization (WHO), the World Bank, ministries of health, nongovernmental development organizations (NGDOs) and local communities. In 1988, we established the MECTIZAN Donation Program at the Task Force for Global Health, as well as the MECTIZAN Expert Committee to provide technical and scientific advice on the implementation of the program.

In 1998, this donation was expanded to include mass treatment for the elimination of lymphatic filariasis (LF) in African countries where onchocerciasis and lymphatic filariasis are co-endemic. The MECTIZAN Donation Program is the longest-running disease-specific drug donation program and public-private partnership of its kind.

Lymphatic filariasis can be found in 72 countries, and is estimated to have infected more than 120 million people.

This balanced governance and organizational structure continues to support and facilitate the donation of MECTIZAN. For more information on the MECTIZAN Donation Program, review the MDP Annual Highlights.

ONCHOCERCIASIS

More commonly known as “river blindness,” onchocerciasis is transmitted through the bite of black flies and can cause intense itching, disfiguring dermatitis, eye lesions and, eventually, blindness. At the inception of the program, the disease was one of the leading causes of preventable blindness worldwide, and approximately 130 million people were at risk for the disease.

Latin America, Colombia, Ecuador and Mexico have received verification from WHO that river blindness has been eliminated, and Guatemala expects to follow suit in 2016.

MECTIZAN relieves the agonizing itching that accompanies the disease and halts progression toward blindness—two characteristics of the disease that dramatically affect the quality of life. MECTIZAN is well-suited for distribution in remote areas by community health workers through mass distribution programs. It is the only well-tolerated drug known to halt the development of river blindness.

William C. Campbell, a retired scientist from our company’s research laboratories, was jointly named the 2015 Nobel Prize winner in Physiology or Medicine with Satoshi Omura, for the discovery of avermectin, which led to our company’s development of Mectizan® (ivermectin), a treatment for river blindness (also known as onchocerciasis) in Africa, Latin America and Yemen. They shared the prize with Youyou Tu for her discoveries concerning a novel therapy for treatment of malaria.

“We are particularly proud of our colleague Dr. Campbell, whose innovation, passion and dedication to fighting diseases during his 30-year career at our company enabled the development of Mectizan. Through our Mectizan Donation Program, we have been working with partners for nearly three decades to make this medicine available, free of charge, to all those affected by river blindness. We remain committed to bringing the best that our science and innovation have to offer to solve the world’s global health challenges.”

Kenneth C. Frazier
Chairman and Chief Executive Officer

LYMPHATIC FILARIASIS

Lymphatic filariasis (LF) is a devastating parasitic infection spread by mosquitoes. It is caused by threadlike parasitic worms that damage the human lymphatic system. The disease is endemic in 72 countries and is estimated to have infected more than 120 million people, with more than 40 million incapacitated or disfigured with swelling of the limbs, breasts (lymphedema) and genitals (hydrocele). Swollen limbs also often develop dramatically thickened, hard, rough and fissured skin (elephantiasis). An annual single dose of MECTIZAN, administered together with a second drug, albendazole (donated by GlaxoSmithKline), is the recommended treatment in areas where onchocerciasis coexists with LF.

RESPONSIBLE DONATIONS AND ADVERSE-EXPERIENCE REPORTING

While side effects following treatment with MECTIZAN are rare, we have developed a rigorous program for monitoring and reporting any adverse experiences (AEs) in the field. With the help of local NGDOs, all field-based community distributors are trained in AE reporting; all AEs must be reported to the company, which then reports them to drug safety and regulatory agencies in the U.S. and internationally.

The MECTIZAN Expert Committee, ministries of health and the WHO also play key roles in making sure best practices are applied for surveillance of AEs at the community level. The AE reporting form itself has been revised several times throughout the program's history. Currently we are working with the WHO, endemic countries and the other drug-donation programs to develop a common AE reporting form to standardize reporting requirements.

PERFORMANCE

COMMITMENTS

While much has been achieved in the treatment of onchocerciasis (river blindness) and progress has been made toward its elimination, there remain a number of additional challenges that we and our partners are committed to actively addressing.

PRODUCT DONATION COMMITMENT

To ensure a continued supply of MECTIZAN® (ivermectin) to support the activities of other program partners, we remain committed to continuing to donate as much MECTIZAN as is necessary to eliminate river blindness globally and to eliminate lymphatic filariasis (LF) in African countries where the diseases coexist.

Since 1987, we have provided financial support for the MECTIZAN Donation Program.

Beyond addressing river blindness and LF, the MECTIZAN Donation Program is a key component of the growing trend

toward integrated programs addressing neglected tropical diseases (NTDs). In fact, the integration of onchocerciasis and LF efforts via the MECTIZAN Donation Program, beginning in 1998, set the foundation for many of these initiatives, and we will remain engaged with key stakeholders to help with integration of the programs where feasible.

FINANCIAL COMMITMENT

Since 1987, we have provided financial support for the MECTIZAN Donation Program, housed at the Task Force for Global Health. Our funding covers the activities of the program secretariat and includes support of the MECTIZAN Expert Committee for the technical and scientific oversight of the donation program.

In addition to our core support for the MECTIZAN Donation Program secretariat, in December 2007 we announced a donation of $25 million over eight years (2008–2015) as part of an initiative with the World Bank to fund the World Health Organization's African Program for Onchocerciasis Control (APOC). APOC was established in 1995 by the World Health Organization (WHO) to carry out a sustainable strategy to control onchocerciasis in Africa using MECTIZAN through an approach called CDTI (community-directed treatment with ivermectin).

The CDTI delivery infrastructure proven effective through APOC is also being used to deliver other health interventions including vitamin A, cataract identification, bed nets, and immunizations and treatment for other NTDs. APOC successfully concluded its activities at the end of 2015, and full responsibility for onchocerciasis control is being transferred to the ministries of health of affected countries, with the goal of establishing country-led systems capable of eliminating onchocerciasis as a public health problem in all endemic countries in Africa.

To help provide the necessary ongoing technical support for country-led neglected tropical disease (NTD) programs, including for onchocerciasis, WHO launched ESPEN (Expanded Special Program to Eliminate NTDs) in early 2016. Our company has committed financial support to ESPEN, and we were invited to join with other partners in designing the ESPEN strategy to provide technical and other resources in support of country-led NTD elimination programs.

In February of 2016, our company and the MECTIZAN Donation Program made a donation of $1M to the END Fund in support of a new initiative that will foster country-led efforts in Africa to determine when treatment for river blindness can be safely stopped. The END Fund's activities are coordinated with ESPEN to ensure alignment among partners at the regional and country levels.

PARTNERSHIP COMMITMENT

As a reflection of our overall commitment to partnership in eliminating neglected tropical diseases (NTDs) such as onchocerciasis and LF, our company is an original signatory of the London Declaration, a collaborative effort to accelerate progress toward eliminating or controlling 10 NTDs by the end of this decade. We joined 12 other global pharmaceutical companies and many other stakeholders, including endemic country governments, the WHO, the Bill & Melinda Gates Foundation, USAID, the UK Department for International Development (DFID), NGOs and other organizations, in this effort. Together with several other pharmaceutical companies, we committed to continuing or increasing our donations of medicines to treat or prevent these diseases; donors committed financial resources, and NGOs agreed to support implementation needs. The partners came together in an initiative called "Uniting to Combat NTDs" to track progress and identify gaps (e.g., in NTD research and additional funding) that need to be addressed in order to reach the goals of the London Declaration. Learn more about the London Declaration.

MILESTONES AND IMPACT

Latin America, Colombia, Ecuador and Mexico have received verification from the World Health Organization that river blindness has been eliminated, and Guatemala expects to receive verification in 2016. The remaining two affected countries, Brazil and Venezuela, are continuing treatment in an area in the Amazon jungle.

In Africa, while the original goal of the program was to control onchocerciasis, current research by the WHO indicates that elimination is now feasible. As a result, the program's strategy has shifted from disease control to disease elimination, and the partners in this program are now working toward the goals established through the WHO Roadmap for Neglected Tropical Diseases, to eliminate LF and onchocerciasis by 2020 and 2025, respectively.

River Blindness and Lymphatic Filariasis (LF) Summary

	2011	2012	2013*	2014	2015
Direct investment in the MECTIZAN® (ivermectin) Donation Program (in millions)	$5.5	$5.5	$5.5	$5.5	$5.8
Total treatments approved (in millions)[1]	233.5	229.0	295.0	257.0	176.0
Treatments approved for river blindness (in millions)	104	85	128	39	55
Treatments approved for lymphatic filariasis (LF) (in millions)	93	109	127	147	94
Treatments approved for joint river blindness and LF programs (in millions)	36.5	35	40	71	27
Market value of MECTIZAN donations (in millions)	$747	$906	$1,092	$861	$1,083
Countries where treatment with MECTIZAN for LF has stopped to allow for post-treatment surveillance and validation (target = 30)[2]	0	0	0	1	3
Latin American countries where treatment with MECTIZAN has been stopped to allow for post-treatment surveillance and verification that the disease has been eliminated (target: 6)	4	4	4	4	4

[1] Additional detail from previous reports to provide more detailed breakdown of donation by disease
[2] New metric/target reflecting program focus on elimination efforts

In 2015, 176 million treatments with MECTIZAN were approved for onchocerciasis and LF. The decrease from 2014 is due to the timing of donation requests from countries; we continue to fulfill 100 percent of all qualified requests for MECTIZAN. To enhance our reporting, we are now breaking down our approval figures to reflect the range of programmatic uses of the donation (river blindness, LF, both). We are also adding a new metric and target related to LF elimination; counting the number of countries where treatment for LF has been stopped to allow for post-treatment validation of elimination.

IMPACT

- Since 2013, Colombia, Ecuador and Mexico have received verification from the World Health Organization that river blindness has been eliminated, and Guatemala expects to receive verification in 2016. The remaining two affected countries, Brazil and Venezuela, are continuing treatment in an area in the Amazon jungle.
- For LF, three countries (Malawi, Togo and Yemen) have stopped treatment with MECTIZAN to allow for post-treatment surveillance and validation
- The donation of MECTIZAN has led to the development of CDTI (community-directed treatment with ivermectin) programs, through which trained community volunteers distribute medicines, a critical element in effective mass-treatment programs in remote areas that often lack trained health care workers
- An estimated 40,000 cases of river blindness are prevented by the MECTIZAN Donation Program annually

For more information on our neglected tropical disease research, visit Infectious Diseases.

KEY INITIATIVES

MEDICAL OUTREACH PROGRAM

MAIN

Established in 1958, our company's Medical Outreach Program (MMOP) is the primary mechanism through which our company donates its pharmaceuticals and vaccines for humanitarian assistance in the developing world and in support of disaster relief and emergency situations worldwide.

The program, managed by our Office of Corporate Responsibility, is one mechanism through which we help to expand access to our products, particularly in the developing world. Through this program we donate critical pharmaceuticals and vaccines to a limited number of qualified, U.S.-based nongovernmental organization (NGO) partners. The scope of the program varies from year to year and is influenced by changing medical needs in developing countries, the quantity of our medicines available for donation, and the random nature of disasters.

Donations of our medicines are made primarily through these qualified NGOs:

- AmeriCares
- Catholic Medical Mission Board (CMMB)
- Direct Relief
- IMA World Health
- MAP International
- Project HOPE

Each of these organizations has a long-standing relationship with the company; demonstrates integrity of purpose; provides assurance that our products will be securely warehoused and not diverted, mishandled or misappropriated; and has well-established programs for the ill and needy in developing countries. Through the program, we have the ability to monitor the NGOs and maintain the controls necessary for the proper distribution and handling of our medicines. We do not provide donations of expired products or of products with inadequate dating. We donate products with sufficient dating to ensure proper administration prior to expiry.

Through supply chain and facility assessments of our partners, we add value beyond our donated medicines. As of March 2015, we have completed evaluations of three of our partners and plan to complete supply chain reviews of the remaining partners by the end of 2016. Collaborative evaluations of domestic medicine warehouse facilities allow us to jointly identify improvements in medicine storage and handling to optimize supply chain effectiveness. Recommendations have included such items as regular storage-rack inspection and maintenance, strengthening of delivery receipt procedures, and

improvements in material-handling procedures. We intend to continue to collaborate with our partners in ongoing reviews following the initial baseline assessment as needed.

The MMOP comprises three components:

ANNUAL PRODUCT ALLOTMENT PROGRAM

Through this program, the NGOs with which we work can request medicines of their choice from our company's current product line, up to an annually authorized amount. Through this approach to donations, our partners can receive a sustained and predictable supply of needed medicines, as is crucial to the effective planning of ongoing humanitarian programs.

ONGOING DONATIONS OF PHARMACEUTICALS & VACCINES

Donations of our pharmaceuticals and vaccines are also made in response to proposals from our partners to address some of the specific shorter-term needs of their programs around the world. We also offer products to our partners proactively, based on supply, for use in their ongoing humanitarian programs.

DISASTER & EMERGENCY RELIEF

Our disaster relief program is designed to provide assistance in response to major disasters and to support efforts in preparedness and recovery. We may provide donations of medicines and vaccines as well as financial support, where appropriate, through our program partners.

We are a member of the Partnership for Quality Medical Donations (PQMD), an alliance of NGOs and medical product manufacturers dedicated to raising the standards of medical donations to meet the needs of underserved populations and disaster victims around the world. In addition, we also observe the World Health Organization (WHO) Guidelines for Drug Donations. Both of these actions help to ensure and maintain the effectiveness of our donation program.

PERFORMANCE

Throughout 2015, the donations of our medicines and vaccines supported vaccination programs in Tanzania and the Dominican Republic; provided disaster assistance in the U.S., the Bahamas, Malawi, Nepal and Paraguay; supported partner medical mission programs; and reached many thousands more worldwide through the ongoing medical programs of the NGOs with which we work.

MMOP Summary

	2011	2012	2013	2014	2015
Countries and territories reached by the MMOP	82	92	86	91	72
People reached by the MMOP[1,2]	NA	NA	NA	433,624	78,555
Value of donations of medicines, vaccines and consumer care products (in millions)[2,3,4,5]	$89.8	$86.3	$69.4	$110.2	$31.1
Disaster relief product contributions (in millions)[3]	$10.4	$0.8	$2.4	$8.5	$4.7

[1] Based on converting volume of medicines and vaccines donated in 2014. Conversion factors for this estimate were developed by IMS Health® using the U.S. product information found on our company's product website; evidence-based factors using the IMS LifeLink® Dx, Patient Medical Claims Data, January 1, 2014, through December 31, 2014, were also developed and used for validation purposes.
[2] The decrease from 2014 to 2015 is due to a reduction in the volume of donation requests and variation in the types of products requested for donation.
[3] We set the value of our product donations based on the U.S. wholesale acquisition cost.
[4] Figure includes the value of product donations through the MMOP only. Product donations to ACHAP are included in the ACHAP section.
[5] Effective October 1, 2014, Bayer AG purchased our company's consumer care business.

KEY INITIATIVES

MSD FOR MOTHERS

MAIN

The death of a woman from complications of pregnancy and childbirth is a tragedy with devastating effects on families, communities and nations.

Most maternal deaths are preventable, and over the last 25 years we've seen a nearly 50 percent decline in the number of women who die from complications of pregnancy or childbirth. Thanks to the commitment of the global health community and national governments, we've made great strides in getting women the care they need.

MSD for Mothers is our company's 10-year, $500 million initiative to help end preventable maternal mortality.

Although there has been impressive progress, the world did not meet the Millennium Development Goal target of a 75 percent reduction in the maternal mortality rate by the December 2015 deadline. Today, maternal mortality is prioritized under Sustainable Development Goal 3.1, which calls for a global reduction in the maternal mortality ratio to less than 70 deaths per 100,000 live births by 2030, a sharp decline from the current ratio of 216 per 100,000.

As we enter a new era of development goals, we have much to be proud of, but we also have much work left to do.

MSD

MSD for mothers

Committed to Saving Lives

OUR APPROACH

MSD for Mothers is our company's 10-year, $500 million initiative that applies our scientific and business expertise, as well as our financial resources, to help end preventable maternal mortality. We are working to catalyze transformative solutions to strengthen sustainable health systems by focusing on improving access to quality maternal health care women receive in health facilities at the time of childbirth, and improving access to quality modern contraceptives.

We are focused on:

- Equipping health care providers with the skills, tools and technologies they need to deliver high-quality services wherever women seek care
- Placing life-saving maternal health products in the hands of women and their providers
- Empowering women to make informed choices about contraception and get the care they need for a healthy pregnancy and childbirth

We have more than 50 projects in more than 30 countries around the world. Our major programs are based in five countries—India, Senegal, Uganda, the U.S., and Zambia—where our goal is to test innovative models that expand women's access to affordable, quality care with the potential to be scaled and sustained.

We are also collaborating with MSD offices around the world to support projects that are responsive to local maternal health needs. In countries as diverse as Colombia, Lebanon, Malawi and the Philippines, these grant-based programs are training health providers in maternal care services, linking pregnant women to care, and raising awareness of safe motherhood.

Working alongside more than 75 partners, we have improved access to quality maternal care and modern contraceptives for more than 5 million women around the world.

Our fellowship program, the MSD Fellowship for Global Health, has grown to 40 employees who participated in 12-week assignments with our partners on the ground in India, Uganda and Zambia, providing assistance in business training, business planning, branding, marketing and demand, generation strategy development, data management, quality assurance, feasibility studies, and recommendations for income-generating activities.

In addition, more than 50 employees across the company are heavily engaged in *MSD for Mothers,* providing technical expertise to support our product innovation efforts and strengthen our programs. They include experts in areas as diverse as pharmacokinetics, cost-effectiveness, marketing, data analysis, supply chain management and information technology.

We continue to raise awareness among our employees about *MSD for Mothers* and provide opportunities for them to become further engaged. There are now more than 350 employee ambassadors in 26 countries who help support the

annual “May is for Mothers” campaign, which reaches employees at 83 of our sites worldwide. Employees have participated in a number of additional activities, including assembling postnatal kits for mothers in Uganda, coordinating mobile phone collections and donations, sharing information about *MSD for Mothers* with their peers at internal meetings, and volunteering with local nonprofit organizations related to maternal health care.

2015 HIGHLIGHTS

Our major achievements in 2015 include:

- *MSD for Mothers*, Ferring Pharmaceuticals and the World Health Organization (WHO) established a collaboration to develop a proprietary formulation of carbetocin, used to prevent postpartum hemorrhage in women after childbirth that is designed to be heat-stable, and in 2015, the WHO enrolled the first patient in a clinical trial to assess the effectiveness of the medicine
- Decreased stock-outs of contraceptives in Senegal from more than 80 percent in 2011, to less than 2 percent in all public health facilities
- Nearly halved maternal mortality in facilities in target districts in Uganda and Zambia through our partnership with the U.S. government (*Saving Mothers, Giving Life*)
- Implemented evidence-based practices to treat the leading causes of maternal death in five states that account for one quarter of the United States’ 4 million births
- Unveiled surprising new research showing that a considerable proportion of women receive maternal health care from private health care providers—an important contribution to the field

IMPROVING ACCESS

MSD for Mothers supports projects in more than 30 countries around the world, with intensive focus in India, Senegal, Uganda, the United States and Zambia.

Our goal is to test innovative models that expand women’s access to affordable, quality care and have the potential to be expanded and sustained. We’re striving to find solutions that will have a lasting impact on ending preventable maternal mortality, today and for years to come.

STRENGTHENING LOCAL PRIVATE HEALTH CARE

One way we’re working to increase access to affordable, quality maternal health services is by improving the care delivered by local private providers, such as independent doctors, midwives and drug shop owners. While in the developing world, maternal health is typically thought to be a responsibility of the public sector, women often turn to private providers as a critical source of care. Women seek care from private providers for a range of reasons, including proximity to their home, flexible hours, a sense of personalized care and sensitivity to local needs and customs. However, this care can be unregulated, expensive and of variable quality.

Given the surprisingly high proportion of women who receive health services from private maternity providers, we believe that strengthening the ability of these providers to meet the health needs of pregnant women could have an impact on reducing maternal mortality. In 2015, we continued to support our partners in India and Uganda to set, maintain and deliver standards for affordable, quality care in the local private health sector.

On Sept. 28, 2015, during the U.N. General Assembly, *MSD for Mothers* joined with the World Bank and Jhpiego to host a special event focused on the often overlooked role of private health care providers in reducing maternal mortality. Titled “Business as Unusual: Harnessing the Reach of Private Maternity Providers to Strengthen Health Systems,” the event brought together a diverse range of speakers to discuss the different ways countries can strengthen private maternal health care and integrate the providers who deliver this care—such as doctors, nurses and midwives—into national health systems. Click here to watch the webcast of the event.

In Uganda, we partnered with Population Services International (PSI) and its local affiliate, PACE, on a project called *MSD for Ugandan Mothers (MUM).* Together we're working to ensure that pregnant women—particularly those in remote and low-income communities—have access to affordable, quality maternal health products and services through the ProFam network of privately-owned franchise clinics. This comprehensive project is also working beyond the clinic setting, helping women overcome common barriers to care, such as cost, transportation and limited supplies.

In 2015, *MUM* expanded the ProFam social franchise to include 142 health facilities in 42 districts nationally (covering more than a third of the country) and improved access to quality care for an estimated 130,000 women.

In India, we've partnered with leading health organizations to strengthen private maternal health care in Jharkhand, Rajasthan and Uttar Pradesh—three states with some of the highest rates of maternal mortality in the country.

- **Pathfinder International** and **World Health Partners** are expanding access to maternal health care by linking the public and private sectors, adding maternal health services to an existing health franchise, connecting remote providers to higher-level care through referral and telemedicine, and ensuring that quality supplies reach the last mile
- **Jhpiego** and the **Federation of Obstetric and Gynaecological Societies of India (FOGSI)** are developing standards of quality care and helping providers meet those standards through training, continuous quality improvement and accreditation
- **Hindustan Latex Family Planning Promotion Trust (HLFPPT)** is adapting a sustainable franchise network of private hospitals and health workers to a new context so women in rural and peri-urban areas have better access to care throughout their pregnancy

These projects have already strengthened more than 800 health facilities, trained approximately 6,000 health workers and improved access to quality care for more than 350,000 women.

In addition to our programs and evaluation efforts that are identifying and testing solutions to help ensure that private providers are affordable and delivering quality maternal health services, we have undertaken related advocacy efforts. Our goal is to ensure that women have access to affordable, quality maternal health services *wherever* they seek care, through public or private sources. That's why we are raising awareness among policymakers, donors and other global health stakeholders about the complementary role of private providers and the importance of working with them to help end preventable maternal deaths.

To support our programmatic and advocacy efforts, we are working with the London School of Hygiene and Tropical Medicine to help us better understand where women receive maternal health care.

In 2015, the London School published the most comprehensive analysis to date of where women receive family planning, antenatal care and delivery services based on demographic and health surveys from 57 low- and middle-income countries. *Tropical Medicine and International Health* published the results in a series of five articles. Findings demonstrate that roughly 40 percent of women who receive maternity care and family planning services do so from private providers. The findings suggest the need for maternal health policymakers to better understand the role of both public and private providers in order to decrease maternal mortality.

In 2016, we will continue working with our research partners at the London School, our NGO partners on the ground, and other influential groups like the World Bank and USAID to better understand and advocate for a more global focus on leveraging local private providers as a tool to help save women's lives.

ADDRESSING THE DISTANCE PROBLEM

In Zambia, distance challenges are considered a leading contributor to the country's high maternal mortality ratio of 224 maternal deaths for every 100,000 live births. Women often have to travel long distances to reach the nearest health facility, making it difficult for them to get the care they need during pregnancy, childbirth and immediately postpartum.

The Maternity Waiting Homes Alliance was launched in 2015 to address this challenge by building and strengthening maternity waiting homes—residences near health facilities where pregnant women can stay until they go into labor and immediately after childbirth.

The goal is to make these homes sustainable by empowering local communities to both effectively manage them and generate income to support their operations through creative entrepreneurial activities, therefore ensuring the homes and the services they provide are available for the long term.

The Alliance is a collaboration among *MSD for Mothers*, the Bill & Melinda Gates Foundation and The ELMA Foundation,

with partners Africare, the University of Michigan, Boston University and the Zambia Center for Applied Health Research and Development. The Alliance is working in conjunction with Saving Mothers, Giving Life, a public-private partnership among the U.S. Government, the Norwegian Ministry of Foreign Affairs, the American College of Obstetricians and Gynecologists, Every Mother Counts, Project C.U.R.E and *MSD for Mothers* to reduce maternal mortality in sub-Saharan Africa.

EXPANDING ACCESS TO FAMILY PLANNING AND IMPROVING ACCESS TO QUALITY MODERN CONTRACEPTIVES

Family planning is recognized as one of the most cost-effective ways to lower maternal mortality rates, potentially averting one-third of maternal deaths by reducing the overall number of pregnancies and helping women adequately space their pregnancies.

In Senegal, as part of our collaboration with the Bill & Melinda Gates Foundation, we are supporting the scale-up of an innovative supply chain model to eliminate stock-outs of contraceptives at health facilities—a serious barrier to family planning.

In 2015, our partner IntraHealth International increased the availability of contraceptive products nationwide by reducing total stock-outs to less than 2 percent from 80 percent in approximately 1,300 public health facilities, and helped increase the contraceptive prevalence rate to 20 percent from 12 percent nationwide in 2011. In total, our efforts have reached more than 3.2 million women. We've also enlisted our employees with expertise in supply chain management to conduct a costing evaluation of this model, which will inform the Senegalese government's plans for national expansion.

We also ensured that in all of our maternal health programs in India and Uganda, postpartum family planning was an integrated service offered to all pregnant women.

BOLSTERING MATERNAL HEALTH IN THE UNITED STATES

In collaboration with national and local organizations in the United States, we are supporting efforts at the community, hospital and policy levels to help make sure that all women across the country have a healthy pregnancy and safe childbirth.

MSD for Mothers now supports work in 16 states to respond to five major challenges that contribute to maternal mortality in the United States:

1. Inconsistent management of obstetric emergencies
2. Lack of good data on why women are dying during pregnancy and childbirth
3. Rise in chronic conditions among pregnant women (e.g., obesity, diabetes, hypertension)
4. Inadequate attention to the postpartum period when many deaths occur
5. Lack of awareness of maternal mortality and morbidity.

The key accomplishments of our U.S. projects in 2015 are:

- **The American Congress of Obstetricians and Gynecologists—District II** is working with more than 10,000 health care providers and approximately 120 birthing facilities to develop and implement standard approaches for handling three of the most common childbirth emergencies: hemorrhage (severe bleeding), venous thromboembolism (blood clots), and severe hypertension (high blood pressure)
- **The Association of Women's Health, Obstetric and Neonatal Nurses** is working with more than 55 hospitals to assess and improve clinicians' ability to recognize women at the greatest risk of obstetric hemorrhage and respond appropriately based on specific indicators. They are also educating nurses about the importance of the postpartum period and developing simple checklists for nurses to review with new mothers as they advise them on identifying signs and symptoms that may require medical attention following childbirth.
- **The California Maternal Quality Care Collaborative** is collaborating with more than 120 hospitals in the state to put in place evidence-based practices for managing obstetric hemorrhage and preeclampsia
- **The Association of Maternal and Child Health Programs** helped 12 states strengthen their ability to review maternal deaths and understand why they are occurring. Early results have identified a need for state departments of health to focus more intently on chronic conditions like hypertension, cardiovascular disease, substance abuse, and mental health problems among pregnant women.
- ***MSD for Mothers*** is also supporting community-based projects in Camden, N.J.; New York City; and Philadelphia,

to help women struggling with chronic health problems receive appropriate care before, during, and after pregnancy

PARTNERING WITH THE U.S. GOVERNMENT TO SAVE WOMEN'S LIVES IN SUB-SAHARAN AFRICA

Saving Mothers, Giving Life (SMGL) is a five year public-private partnership led by the U.S. government to reduce maternal mortality in sub-Saharan Africa, beginning in Uganda and Zambia. *MSD for Mothers* is a founding partner of the initiative, and our programs in both countries contribute to *SMGL's* work to put in place lifesaving maternal and newborn health interventions. At the mid-way point, *SMGL* has produced impressive results: maternal mortality ratios fell by 45 percent in target facilities in Uganda and by 53 percent in target facilities in Zambia.

For a complete list of our partners, please visit the *MSD for Mothers* website.

INNOVATION

ADVANCING LIFE-SAVING PRODUCTS

As a research-based health care company, innovations in life-saving products are one of the most important and distinct contributions we can make to improve maternal health. Our scientists and others are deeply involved in identifying, developing and advancing new and/or improved products to address unmet maternal health needs in the developing world. Our focus continues to be on preventing and treating the leading direct cause of maternal death worldwide: postpartum hemorrhage (PPH).

In 2013, *MSD for Mothers*, Ferring Pharmaceuticals and the World Health Organization (WHO) established a collaboration to develop a proprietary formulation of carbetocin, used to prevent PPH in women after childbirth, that is designed to be heat-stable—stable even in hot and tropical climates.

PPH is the leading cause of maternal deaths around the world. The development of a medicine that can be stored at elevated temperatures has the potential to significantly improve management of bleeding following childbirth in many countries where cold temperatures during storage and distribution of the medicine are difficult to achieve and maintain. The availability of a heat-stable carbetocin product could help reduce maternal deaths in these countries.

In 2015, the WHO initiated a multi-country clinical study including 30,000 women to evaluate the effectiveness of an investigational heat-stable carbetocin in vaginal deliveries compared to the current standard of treatment, oxytocin. If the results of the study are positive and the medicine is approved by the appropriate regulatory authorities, we intend to make it available in the public sector of developing countries that have a high burden of maternal mortality at an affordable and sustainable price.

MSD for Mothers is also interested in devising an easier-to-administer dosing regimen for magnesium sulfate, the current gold standard for managing seizures in pregnant women suffering from preeclampsia/eclampsia. The first step toward this goal, identifying a dose range using our internal modeling and simulation expertise and data from collaborating universities and hospitals around the world, is scheduled to be completed by the end of 2016.

DIGITAL INNOVATIONS

Digital innovations, especially mobile technology solutions, are playing an increasingly important role in advancing global health and development efforts, empowering people to learn and make decisions about their health and access much-needed health services in new and interactive ways.

MSD for Mothers believes that disruptive innovation through digital technology has the power to transform the quality of maternal health care services being delivered around the world, so we have committed resources to identifying and developing solutions that will tackle some of the most critical obstacles that stand in the way of delivering quality care that could reduce the number of women who die during childbirth.

Beyond providing financial resources to develop digital innovations, our digital experts are providing technical support and strategic insights into technology trends that may have implications for the solutions' design. *MSD for Mothers* aims to be a catalyst in helping to leverage technology to address critical and potentially life-saving needs for mothers around the world.

PERFORMANCE

MSD for Mothers Summary (for priority countries)

	2014	2015
Providers/community health workers trained	4,370	6,814
Districts/regions reached	143	110
Women with improved access to quality care	3,534,889	4,948,803
Women with improved access to modern contraception (in Senegal and India)	2,619,805	3,607,496
Facilities strengthened to provide quality care	1,682	2,575
Women delivering in facilities providing high-quality care	69,260	272,744

Note: Priority countries include India, Senegal, Uganda, the United States and Zambia.

KEY INITIATIVES

U.S. PATIENT ASSISTANCE PROGRAMS

MAIN

We believe that no one should go without the medicines or vaccines they need.

GRI G4-EC8

That is why our company provides our medicines and adult vaccines for free to people who do not have prescription drug or health insurance coverage and who, without our assistance, could not afford these medicines and vaccines. This is consistent with our company's long-held values and tradition of putting patients first.

More than 55 years ago, our company created our first U.S. patient assistance program (PAP) to keep affordable medicines within patients' reach. Through these programs, we have provided more than 35.6 million free prescriptions and adult vaccines, representing a total value (wholesale acquisition cost) of more than $4.1 billion.

Learn more about our U.S. patient assistance programs, including eligibility requirements.

COMMUNICATING OUR PROGRAMS TO DOCTORS & CONSUMERS

We work to raise awareness of our patient assistance program among doctors and eligible patients via brochures, and applications posted on our website and other company communications, including social media. All toll-free phone lines for our medicines and/or vaccines include an option for patients to learn about our patient assistance programs.

PARTNERSHIP FOR PRESCRIPTION ASSISTANCE

We also participate in the pharmaceutical industry initiative Partnership for Prescription Assistance (PPA). The Partnership brings together America's pharmaceutical companies, as well as doctors, patient advocacy organizations and civic groups, to help low-income, uninsured patients get free or nearly free brand-name medicines. PPA does this through a single website that provides information for and access to more than 475 public and private patient-assistance programs, including more than 200 programs offered by pharmaceutical companies like ours. To date, PPA has helped millions of Americans get free or reduced-cost prescription medicines.

Our participation in PPA underscores our commitment to help the uninsured gain access to our medicines and vaccines. Learn more about the Partnership for Prescription Assistance.

PERFORMANCE

Patient Assistance Programs Summary

	2011	2012	2013	2014	2015
Patients utilizing our U.S. Patient Assistance Program[1] (thousands)	379	444	400	301	293
30-day prescriptions filled (millions)	2.5	2.2	1.2	1.6	1.6
Total value of our company's medicines dispensed under our U.S. Patient Assistance Program (in millions)[2]	$301.2	$559.0	$566.4	$432.9	$566.6

[1] Totals represent 2011 to 2015 volumes of our U.S. Patient Assistance Program
[2] Totals are based on the U.S. wholesale acquisition cost (WAC) and cover all programs.

The main driver of changes within the patient and prescription volumes for 2013–2015 may be a result of the impact of the Affordable Care Act, as well as, periodic changes in the products covered in the U.S. patient assistance program. These changes are due, in part, to company divestitures, the introduction of competing products, and the availability of generic alternatives.

ACCESS TO HEALTH

RESEARCH & DEVELOPMENT

MAIN

Our passion is improving health. That is what keeps us at the forefront of scientific discovery and innovation. Applying breakthrough science to develop meaningful new medicines and vaccines is our legacy.

OUR COMMITMENTS

- We will evaluate and reflect, where appropriate, the needs of emerging markets in the R&D of our products
- We will conduct our clinical trials, including trials in Low Income and Middle Income countries, in accordance with the global standards of Good Clinical Practices, applicable local regulatory requirements and following the ethical principles that have their origin in the Declaration of Helsinki
- We will collaborate with diverse partners to expand our R&D capacity to address unmet needs, including those in emerging markets and least-developed countries
- We will pursue opportunities to provide access to compound libraries and molecules to spur development of new products

We are committed to addressing unmet medical needs through innovative research and development: R&D expenses were $6.7 billion in 2015. The talent of our scientists, combined with recent scientific and technological advances, is leading to an exciting period for research as we seek new and more effective ways to treat diseases.

PEDIATRIC R&D

We are including pediatric development programs in the company's new drug and vaccine development strategies worldwide, where relevant, in response to unmet clinical needs.

Further, where appropriate, we will develop and seek approval for pediatric indications and develop age-specific formulations. We utilize an internal Pediatric Development Committee to review and provide input into all pediatric development strategies across various therapeutic areas. The committee serves as a Center of Excellence within our company to consult on pediatric development issues and key pediatric policy questions. For a listing of all clinical trials, including pediatric clinical trials, click here.

GRI G4-PR1

Our R&D model is designed to increase productivity and improve the probability of success by prioritizing resources based on scientific opportunity, medical need and commercial potential.

We are committed to advancing our most promising research and clinical development to bring forward new medicines and vaccines that will make a meaningful difference in patients' lives. Learn more.

Faced with the complex challenges of bringing important new therapies to patients while simultaneously controlling the rising costs of innovation, we are using important new preclinical, clinical and quantitative tools to help us rapidly differentiate between developmental candidates that will clearly meet patient needs and those that will not. A focus on genetics, genomics and translational medicine is also critical to these efforts, for instance, by enabling us to develop biomarkers—those characteristics that can be objectively measured and evaluated as indicators (or markers) of normal biologic processes, disease or responses to therapy. Since biomarkers provide critical information in the drug discovery and development processes, our intent is to apply them very early in the development of novel therapeutic candidates to provide preliminary evidence of their potential benefit before proceeding with further development.

In addition, we are using novel quantitative approaches to analyzing preclinical experiments to inform our clinical trials and to develop models based on published literature. By integrating our knowledge from these sources, we can develop mathematical models that allow us to explore possible clinical trial scenarios. We now have the capability to first simulate a trial thousands of times, exploring the impact of different factors that influence a specific disease and/or patient population, and the related efficacy and safety of responses.

With this integrated approach we can optimize the next phase of clinical trials and, importantly, make pivotal decisions earlier and more confidently, increasing productivity and improving the probability of success. By eliminating likely failures sooner and focusing on those mechanisms that appear more promising, we believe we can bring innovative products to patients faster, while still maintaining a rigorous focus on scientific excellence and safety.

We recognize that real-world data have a significant impact on how medicines and vaccines are developed and evaluated. Through the contributions of epidemiologists, health economists, outcome researchers, data specialists and other health-policy researchers across our company, we strive to comprehensively assess the best available information on the value of our medicines and vaccines.

OUR PIPELINE

Our company prioritizes its research and development efforts on advancing candidates that we believe represent the next areas of breakthrough science that will make a difference and deliver value for patients, physicians and payers.

This focus includes candidates that target many of the world's most urgent global health challenges, such as our immuno-oncology program, including KEYTRUDA® (pembrolizumab), which is being studied in multiple oncology indications; a BACE inhibitor for Alzheimer's disease (MK-8931) and an investigational HIV medicine (doravirine). We pursue therapies in a variety of modalities, including small molecules, vaccines and biologics.

Our company is prominently positioned at the intersection of invention and the burden of disease. Our products and research priorities are aligned with the current and projected global burden of disease as defined by the World Health Organization (WHO), as well as with the increasing need for new therapies targeted to treatment-resistant diseases such as hepatitis C and antibiotic-resistant infections.

Our research pipeline illustrates the progress of our R&D efforts. We currently have a number of candidates under regulatory review in the U.S. and internationally. An update on our R&D activities can be found in the company's 10-K Report.

EXTERNAL OUTREACH

We support academic and community-based physicians and researchers in expanding clinical and scientific knowledge, and improving understanding of the appropriate use of our products.

Our Investigator Studies Program is an example of our efforts to advance science and improve patient care by supporting, through the provision of drugs and vaccines and/or total or partial funding, high-quality research that is initiated, designed, implemented and sponsored by external investigators. Results are documented and properly disseminated in peer-reviewed publications.

Our company is a member of and supports numerous professional associations, including the American Association for the Advancement of Science (AAAS), the U.S. National Institutes of Health (NIH), the U.S. National Science Foundation (NSF), the World Medical Association (WMA) and the National Academies. In addition to promoting dialogue and the exchange of ideas in research, we sponsor research conferences—such as selected Gordon Research Conferences, an international forum in which researchers discuss advances in biologic, chemical and physical science—that cover areas in which our company is conducting research.

We believe in broad disclosure of financial relationships between physicians and the pharmaceutical industry. We comply with the Physician Payments Sunshine Act provisions of the U.S. Affordable Care Act, which requires pharmaceutical manufacturers to annually disclose information on certain additional payments and other transfer of value furnished to U.S. licensed physicians and U.S. teaching hospitals to the Department of Health and Human Services (HHS). In addition to submitting such information to HHS's Center for Medicare & Medicaid Services each year, we post the information annually on this website. Visit the transparency disclosures section of the report for more information and a full list of disclosures.

We also collaborate with external researchers and other members of the pharmaceutical industry by participating in selected scientific consortia. Consortia are an important mechanism by which researchers can work together in a precompetitive manner to address complex scientific challenges common to all parties. These consortia are typically in the form of public-private partnerships.

PUBLIC-PRIVATE RESEARCH PARTNERSHIPS

We recognize that individuals or companies cannot successfully develop drugs single-handedly. Most cases of true innovation come from robust and honest collaboration among individuals and organizations with diverse backgrounds and capabilities, brought together by the idea of changing the course of human health.

As part of our R&D strategy, we pursue opportunities to establish external alliances to complement our substantial internal research capabilities, including research collaborations, as well as license agreements for preclinical and clinical compounds that have the potential to drive both near- and long-term growth. In this regard, our research laboratories established significant external alliances to advance drug discovery and development, improve R&D productivity, and successfully commercialize novel therapeutics and vaccines.

Accelerating Medicines Partnership (AMP)—New Diagnostics & Therapies
We are a member of the Accelerating Medicines Partnership (AMP), a venture between the National Institutes of Health (NIH), 10 biopharmaceutical companies and several nonprofit organizations to transform the current model for developing new diagnostics and treatments by jointly identifying and validating promising biological targets of disease. The ultimate goal is to increase the number of new diagnostics and therapies for patients and reduce the time and cost of developing them.

AMP will begin with three-to-five-year pilot projects in the three disease areas of Alzheimer's disease, type 2 diabetes, and autoimmune disorders of rheumatoid arthritis and systemic lupus erythematosus (lupus). Our company is contributing to the

type 2 diabetes and rheumatoid arthritis/lupus projects.

Bayer—soluble guanylate cyclase (sGC) modulators
Initiated in 2014, we are continuing to make substantial progress in our development and commercialization partnership with Bayer for soluble guanylate cyclase (sGC) modulators, a novel class of compounds affecting the nitric oxide pathway with promise in various cardiovascular indications.

At this time, the partnership includes two compounds, riociguat and vericiguat. Riociguat (ADEMPAS®), already approved for the treatment of primary pulmonary hypertension (PAH) and pulmonary hypertension secondary to chronic thromboembolism (CETPH), is subject to various Phase IV life-cycle management studies as well as Phase II indication expansion studies to further explore the potential antifibrotic benefit in other orphan diseases.

The development of vericiguat focuses on its potential utility in the treatment of patients with worsening chronic heart failure. Setup as a development partnership for compounds in Phase 2 and beyond, the discovery and early development teams from both companies continue to explore additional sGC modulators for potential future inclusion in the collaboration to exploit the potent vasodilatory and antifibrotic properties in various cardiovascular and non-cardiovascular areas of huge unmet need.

Biomarkers Consortium—Biomarker-Based Technologies
The Biomarkers Consortium, in which we participate, is a public-private biomedical research partnership managed by the Foundation for the National Institutes of Health (FNIH). Its goal is to combine the forces of the public and private sectors to accelerate development of biomarker-based technologies, medicines and therapies for the prevention, early detection, diagnosis and treatment of disease. Working together, the members of the Biomarkers Consortium are building uniquely powerful collaborations that are accelerating the development of biomarker-based technologies, medicines and therapies.

To date, the Biomarkers Consortium has launched 10 projects in areas as diverse as Alzheimer's disease, cardiovascular disease and breast cancer. A number of other promising projects are also moving toward implementation. Our company contributes to a number of FNIH projects within this consortium.

cCAM Biotherapeutics (acquisition)
In July 2015, we announced acquisition of cCAM Biotherapeutics, a privately held biopharmaceutical company focused on the discovery and development of novel cancer immunotherapies.

The acquisition provides our company with several early immunotherapy candidates including cCAM Biotherapeutics' lead pipeline candidate, CM-24?a novel monoclonal antibody (mAb) targeting the immune checkpoint protein CEACAM1 that is currently being evaluated in a Phase 1 study for the treatment of advanced or recurrent malignancies including melanoma, non-small-cell lung, bladder, gastric, colorectal and ovarian cancers.

Clinical Trials Transformation Initiative (CTTI)/Duke University?FDA
We continue to focus efforts on improving the way in which clinical trials are recruited and conducted. To further those efforts, we are an active member of the Clinical Trials Transformation Initiative (CTTI), a public-private partnership led by FDA and the Duke Clinical Research Institute. CTTI works with industry and academic partners to identify and promote practices that will increase the quality and efficiency of clinical trials, and will foster a high-quality clinical trial system that is patient-centered and efficient, enabling reliable and timely access to evidence-based prevention and treatment options. Current working groups are focused on patient-informed consent processes and standards, on Investigational New Drug (IND) safety reporting, and on best practices for Data Monitoring Committees.

GE Healthcare—Alzheimer's Disease
We are aggressively advancing research on Alzheimer's disease through projects with imaging and diagnostic companies to help determine which patients may benefit most from novel treatments in development.

We have a clinical study collaboration, license and supply agreement with GE Healthcare for the use of Flutemetamol, an investigational positron emission tomography (PET) imaging agent, to support our company's development of MK-8931, a novel oral beta amyloid precursor protein site cleaving enzyme (BACE) inhibitor and our lead investigational candidate for Alzheimer's disease.

Accumulation of beta amyloid in the brain is a pathological characteristic related to Alzheimer's disease. Currently, Alzheimer's disease has typically been diagnosed by clinical examination (i.e., medical history, physical, neurological, psychiatric and neuropsychological exams; laboratory tests; and magnetic resonance imaging [MRI] or computed tomography [CT] scans). A diagnosis of Alzheimer's disease was primarily confirmed through histopathological identification of characteristic features, including beta amyloid plaques, in post-mortem brain samples. There has been a serious unmet need for a reliable method for measuring beta amyloid deposits to help physicians diagnose Alzheimer's disease. With the

recent approval of several amyloid PET ligands, amyloid PET imaging is increasingly being used to diagnose Alzheimer's disease, particularly for subjects early in the disease.

Harvard Multi-Regional Clinical Trials (MRCT) Center
We are a participating member in the Harvard Multi-Regional Clinical Trials (MRCT) Center working group, and have partnered with MRCT to develop a template for return of results for our company's clinical trials based, in part, on EMA requirements.

The Harvard MRCT Center's mission is to improve the design, conduct and oversight of multiregional clinical trials, focusing on trials sited in or involving the developing world; simplifying research through the use of best practices; and fostering respect for research participants, efficacy, safety and fairness in transnational, transcultural human subject research.

Innovative Medicines Initiative (IMI)—Accelerating Research
Within Europe, we participate in a number of Innovative Medicines Initiative (IMI) projects. IMI, Europe's largest public-private initiative aiming to speed drug development and improve safety, supports collaborative research projects and builds networks of industrial and academic experts to boost pharmaceutical innovation.

An ongoing IMI project centers on collaboration with the European Patients' Academy on Therapeutic Innovation (EUPATI) by developing standards and trainings for patient advocacy group leaders. EUPATI launched the in-depth Patient Expert Training Course in October 2014 and in January 2016, launched a web-based educational toolbox, hosting educational material in English, Italian, Spanish, Polish, German, French and Russian aiming to reach 12,000 patient advocates across Europe.

Moderna—Messenger RNA-based Antiviral Vaccines and Passive Immunity Therapies
In January 2015, we announced an agreement with Moderna for the discovery and development of vaccines and passive immunity treatments against viral diseases using modified messenger RNA (mRNA). Moderna is a pioneer in the development of mRNA Therapeutics™ across a range of therapeutic applications. Moderna's work in the collaboration will be led by Valera, its venture focused on the development of mRNA vaccines and therapeutics to fight infectious disease. Their exciting preclinical research shows the ability of mRNA to express viral antigens in vivo to induce a robust and protective immune response. By combining the benefit of Moderna's upcoming data from their first clinical trials and our company's strength in vaccines and antiviral development, we hope to transform the development of vaccines and therapeutics against viral diseases.

The three-year research collaboration (with the possibility of a one-year extension) is focused on the development of new mRNA-based treatments and vaccines against four undisclosed viruses.

NGM Biopharmaceuticals, Inc.—Strategic Collaboration to Discover, Develop and Commercialize Novel Biologic Therapeutics
The partnership, announced in February 2015, combines NGM's unique biology-focused research platform with our company's late-stage clinical and commercialization strengths to discover medicines for serious diseases.

The collaboration, initially planned for five years, includes multiple drug candidates currently in preclinical development at NGM, including NP201, which is being evaluated for the treatment of diabetes, obesity and nonalcoholic steatohepatitis (NASH).

National Academies
We continue to partner with the National Academies, an independent, nonprofit organization that works outside of government to provide unbiased and authoritative advice to decision makers and the public. We are a member of the Roundtable on the Promotion of Health Equity and the Elimination of Health Disparities. We are also actively seeking opportunities to improve the representation of racial and ethnic minorities in clinical trials.

In addition, our company worked closely with the National Academies and a range of other global organizations in the development of the Sharing Clinical Trial Data: Maximizing Benefits, Minimizing Risk report (Released: January 14, 2015), which articulated a forward-thinking set of standards for the sharing of clinical trial data information.

National Institutes of Health Alzheimer's Disease Neuroimaging Initiative (ADNI)
We continued our participation in the National Institutes of Health Alzheimer's Disease Neuroimaging Initiative (ADNI), the largest public-private partnership in Alzheimer's disease research. This study, which is designed to gain new insights into the onset and progression of Alzheimer's disease, has now expanded to ADNI3, with the goal of improving clinical trial design and aiding drug development. ADNI3 will seek to identify and track early changes in the brain before the onset of Alzheimer's symptoms by using imaging techniques, including the newly developed tau PET ligands, and biomarker measures in blood and cerebrospinal fluid.

Pfizer & Samsung Bioepis—Diabetes
In 2013, we announced early-stage diabetes and metabolic research partnerships, as well as clinical collaborations that we hope will bring forward the next wave of oral therapies.

We entered into a worldwide (except Japan) collaboration agreement with Pfizer for the development and commercialization of Pfizer's ertugliflozin (PF-04971729/MK-8835), an investigational oral sodium glucose cotransporter (SGLT-2) inhibitor for the treatment of type 2 diabetes. Development of ertugliflozin has progressed to Phase III. Under the terms of the agreement, we are collaborating with Pfizer on the clinical development and commercialization of ertugliflozin and ertugliflozin-containing fixed-dose combinations with metformin and with JANUVIA® (sitagliptin) tablets.

We also entered into an agreement with Samsung Bioepis to develop, manufacture and commercialize MK-1293, an insulin glargine candidate for the treatment of patients with type 1 and type 2 diabetes. Under the terms of the agreement, our company is responsible for the clinical development, manufacturing and, if approved, commercialization of MK-1293.

Predictive Safety Testing Consortium—Safety-Testing Methods
We are a member of the Predictive Safety Testing Consortium (PSTC), a unique public-private partnership led by the nonprofit Critical Path Institute (C-Path). The PSTC brings together pharmaceutical companies to share and validate their safety-testing methods under the advisement of the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA).

The 18 corporate members of the consortium share internal experiences with preclinical and clinical safety biomarkers in kidney, liver, skeletal muscle, testicular toxicity, vascular injury and cardiac hypertrophy. All biomarker research programs have a strong translational focus to select new safety tools that are applicable across the drug-development spectrum. Advancing the science and use of biomarkers in drug development is a critical area of focus for our company.

The following are notable PSTC achievements:

- The FDA and EMA qualified seven new urine tests that signal kidney injury
- The PSTC opened a biomarker-qualification process with the FDA for new biomarkers of drug-induced liver and skeletal muscle injury
- The Japanese Pharmaceuticals and Medical Devices Agency (PMDA) qualified new biomarker laboratory tests that signal kidney injury

TransCelerate BioPharma Inc.
Our company joined TransCelerate BioPharma Inc., a nonprofit organization focus on improving the health of people around the world by simplifying and accelerating the research and development of innovative new therapies. We support the philosophy that collaboration on topics across the biopharmaceutical research and development community is the best way to solve our industry's most complex challenges and drive positive change.

We actively participate in all five of the strategic priority areas: 1) Improve the Site Investigator Experience; 2) Facilitate Information Sharing; 3) Enable Harmonization of Clinical Trial Processes; 4) Enhance Sponsor Efficiencies; and 5) Improve the Patient Experience. Our colleagues contribute across a breadth of responsibilities. This includes serving on the Board of Directors and fulfilling Treasurer, Sponsor, Workstream lead and Workstream member roles.

GOVERNANCE

Our governance structure is as vital to our success as the life-changing products we bring to market.

Our Research Leadership Team develops the divisional strategy, allocates resources and manages the R&D portfolio. The team comprises the heads of functional areas within our company's research laboratories, and each area provides expert, efficient support of our drug candidates—ushering them from drug discovery through product-life-cycle management.

CODE OF CONDUCT

All of our employees must abide by our Code of Conduct, which applies to the way we work with external researchers, doctors and academics. According to our Guiding Principles for Business Practices Involving the Medical and Scientific Community, all activities involving the medical and scientific community that are sponsored or supported by our company, including our subsidiaries, are to have a legitimate, well-articulated business purpose. In addition, all activities are to be implemented in accordance with the highest standards of ethics and integrity, having the utmost regard for patient health and safety.

In accordance with our company's policy, we do not tolerate fraud or misconduct in our research activities—whether by an employee or an external business partner. We deal promptly, directly and appropriately with all reported cases. MRL policy is aligned with our company's Corporate Policy on Reporting and Responding to Misconduct.

COMPLIANCE

To help ensure compliance, we have clear policies in place to provide guidance to employees on ethical and lawful conduct. It is each employee's responsibility to conduct him or herself ethically and lawfully.

Our company's compliance program is based on Chapter 8 of the U.S. Federal Sentencing Guidelines, Sentencing of Organizations, as amended, which sets forth the elements of an effective compliance program, as well as more specific guidance for the pharmaceutical industry issued by the Office of the Inspector General in 2001. Learn more about our company's compliance programs.

The company's Compliance Charter has allocated responsibility and accountability for compliance to the divisional level. Therefore, each division has established its own compliance committee to tackle specific divisional issues and requirements.

The stated objective of the Compliance Committee Charter within our research laboratories is to ensure ongoing compliance with applicable laws and requirements in all business areas through appropriate management structure, processes and training. To manage compliance the Committee is composed of the Research Leadership Team. In this way, compliance efforts encompass the entire division and go beyond simply addressing the conduct of clinical trials.

The Committee also promotes ethical science and provides guidance to MRL employees on our company's standards and corporate policies, as well as necessary education related to specific requirements applicable to the research community.

PERFORMANCE

R&D Summary

	2011	2012	2013	2014	2015
Research and Development expenses (in billions)	$8.5	$8.2	$7.5	$7.2	$6.7
Employees involved in research activities	14,100	13,600	12,300	11,400	11,900
New products approved[1]	3	3	0	7	2
Products in the pipeline and under regulatory review[2]	34	41	35	33	31
Top 20 global burdens of illness addressed by our products and pipeline[3]	53%	55%	88%	88%	88%
Established significant external licenses and collaborations.[4]	52	61	40	35	64
Filed U.S. patent applications	223	192	159	125	185

[1] Form 10-K
[2] Candidates in our company's research pipeline or under regulatory review as reported in the United States Securities and Exchange Commission Form 10-K, page 16, filed on February 26, 2016. This includes candidates in Phase II, Phase III, or under regulatory review as of February 19, 2016. When candidates attain regulatory approval they are removed from this pipeline view.
[3] As defined by the Institute for Health Metrics and Evaluation (IHME), which replaces the previously used WHO chart of leading causes of disease condition or injury.
[4] Starting in 2014, this metric no longer includes select early licenses and research collaborations that were included in the metric for previous years.

RESEARCH & DEVELOPMENT

PRODUCT & PATIENT SAFETY

MAIN

We recognize that when people take our medicines and vaccines, they must have confidence in their efficacy and safety.

GRI G4-PR1

Our company's medicines and vaccines are widely tested before they are approved for marketing. This testing is governed by a comprehensive regulatory scheme and by our research policies. We assess the safety of our products in rigorous clinical trials before they are approved. Learn more about our clinical trials.

Our company's new chief medical officer, Roy Baynes, MD, PhD, holds overall responsibility for the benefit/risk of our pipeline and marketed products, provides medical oversight for all clinical programs, supervises the development and implementation of medical policies (including those related to data transparency and the sharing of clinical data), and has authority over the design, execution and implementation of expanded access ("compassionate use") programs.

REPORTING AN ADVERSE EXPERIENCE IN THE U.S.

To speak with one of our health care professionals about our company's products, or to report an adverse experience with a specific product, please call our company's National Service Center at 800-444-2080. The center can assist you Monday through Friday

from 8 a.m. to 7 p.m. Eastern time. Adverse experiences and product-related emergencies can be reported at any time by dialing 800-444-2080.

Our company's Global Safety function manages a global system for the collection, management and reporting of adverse experience (AE) reports received by our company worldwide. Learn more.

MONITORING & COMPLIANCE

The Good Clinical Practice: Process Technology and Vendors (MRL QA GCP-PTV), Good Clinical Practice: Investigator Sites, Country Operations and Partners (MRL QA GCP-ISCOP) and Pharmacovigilance (MRL QA PV) functions are part of our company's Quality Assurance Organization. This group is responsible for conducting independent, periodic audits of the processes, computerized systems, technology and collaborative partners supporting the Human Health and Animal Health divisions within our company.

The MRL QA GCP/PV audit program is a comprehensive, risk-based audit and oversight program that encompasses a broad range of assessments as listed below:

- **Clinical investigator sites**: Audits to assess compliance with the protocol and with relevant global and local regulations/guidance (e.g., GCP & PV regulations)
- **Collaborative partners**: Pre-contractual assessments and selected post-contractual audits of contracted research organizations (CROs), central laboratories and other third-party business partners and vendors
- **Computerized systems and technology**: Audits and assessments of the relevant computerized systems and technology
- **Internal process/systems audits**: Systematic evaluations of adherence to relevant internal policies, Standard Operating Procedures and guidelines as well as applicable global and local regulations/guidance
- **Country operations audits**: Periodic and systematic assessments of our company's activities carried out by our subsidiaries worldwide
- **Business partner audits**: Audits of external companies with which a licensing or development agreement exists where compliance with contractual and regulatory requirements is assessed
- **Verification audits**: Audits to verify the effectiveness of corrective actions

Through the oversight and implementation of this comprehensive audit program, MRL QA provides independent assurance to our company's senior management that the operations, processes, and computerized systems and technology supporting our Human Health and Animal Health development activities comply with applicable global and local regulations and guidelines as well as internal company policies and procedures.

CLINICAL SAFETY & RISK MANAGEMENT

Clinical Safety and Risk Management (CSRM) leads the Risk Management & Safety teams for all products, from the beginning of Phase IIb through the end of the product life cycle. CSRM is responsible for the formation of a proactive clinical safety risk-management strategy, including the Risk Management Plan, which is a regulatory requirement in many countries for marketed drugs and vaccines.

Development of the overall risk-management strategy incorporates all available internal information (e.g., basic research data, and animal and human studies with the product and/or related products) and external information (e.g., literature and public data related to the class of drugs and/or therapeutic target) that contribute to the overall risk-benefit assessment of the product. The strategy focuses on activities needed to identify, evaluate and manage potential patient-safety risks. The Risk Management & Safety teams address patient safety using product labeling, physician and patient educational programs, and other risk-minimization strategies, as appropriate. The Risk Management & Safety teams also implement

strategies to determine the effectiveness of these interventions, as appropriate.

SafetyMatters Initiative: The goal of our company's SafetyMatters Initiative is to explore and implement the appropriate use of emerging technologies and methods for health outcomes of interest (HOIs) identification and evaluation, and to further improve post-licensure monitoring and evaluation of our marketed products. A cornerstone of SafetyMatters is the proactive development and utilization, as needed, of Disease Cohorts (i.e., groups of patients identified as having specific conditions of interest) based on data contained in large medical claims and electronic health-record databases licensed by our company. As of May 1, 2016, our company's Pharmacoepidemiology and Database Research Unit has successfully created and utilized 30 SafetyMatters Disease Cohorts in 18 product-specific areas. Proactive development of these cohorts greatly facilitates our ability to effectively and promptly respond to many internal or external inquiries about the epidemiology of these diseases and their treatment.

Product Label Reviews: The ongoing oversight and monitoring of our product labels are a major focus of our safety efforts. Our label review teams monitor information on our products and work with our product Risk Management & Safety teams to develop or update product labeling. We communicate relevant information regularly to regulatory agencies worldwide.

Innovative Medical Evidence Development and Surveillance (IMEDS): The Innovative Medical Evidence Development and Surveillance (IMEDS) program is a partnership between the Pharmaceutical Research and Manufacturers of America (PhRMA), academia and the FDA. The IMEDS program is a public-private partnership created to build upon the significant progress made on research methodology by the FDA's Sentinel Initiative, including its Mini-Sentinel pilot. IMEDS's primary objective is to advance the science and tools necessary to support post-marketing evidence generation on regulated products, including safety surveillance and evaluations, and to facilitate utilization of a robust electronic health care data platform for generating better evidence on regulated products in post-marketing settings.

Our company supports IMEDS through participation in the Observational Health Data Sciences and Informatics (OHDSI) program, dedicated to advancing pharmacoepidemiology methods development for distributed database systems, and through representation on the Scientific Advisory Committee of IMEDS. We continue to explore synergies and linkages between IMEDS and our own SafetyMatters initiative to establish standards for the use of modern epidemiology data sources and analytic techniques for evaluating product safety in observational claims and electronic health-record databases.

PRODUCT SAFETY

We rigorously study our products, and work with regulators and health care professionals over many years to characterize their safety profiles. Initially, test compounds are evaluated in the laboratory. If they pass stringent laboratory tests, the compounds move into next-stage testing in animals. Only a few compounds ever make it that far. If the compound makes it through the animal-testing stage, we then begin clinical development, during which multiple studies are conducted over several years.

Clinical testing begins in Phase I in a small number of people and progresses through Phase III, during which the safety and efficacy of a medicine is rigorously evaluated. If the clinical studies are successful, we submit extensive documentation and data to regulators in a product-licensing application. Before approving a medicine or vaccine for use, regulators scrutinize these extensive data and analyses. Even after a product is approved, we continue to actively monitor the safety of our medicines and vaccines in various ways, including post-marketing studies. If we identify safety issues following a product's approval, we work closely with the regulatory authorities to communicate promptly and appropriately with health care professionals and patients.

COMMUNICATING ABOUT PRODUCT RISKS

GRI G4-PR3

Our information leaflets in our product packaging contain information on possible side effects and, if appropriate, how to avoid some potential problems. We include contact details on our corporate website for patients, caregivers and health professionals to report adverse experiences in the U.S. Outside the U.S., adverse events are reported according to local laws and practices.

Depending on label changes and their context, we may determine, in consultation with regulatory agencies, that more

extensive communications may be appropriate. In such cases, we work with regulatory authorities to contact health care professionals in a timely manner, so that they can communicate these findings to patients through appropriate mechanisms. Contacting health care professionals might include “Dear Doctor” letters and media releases.

ADVERSE EVENT REPORTING

Global Safety manages a global system for the collection, evaluation and reporting of adverse experience (AE) reports received by our company worldwide.

REPORTING AN ADVERSE EXPERIENCE IN THE U.S.

To speak with one of our health care professionals about our company’s products, or to report an adverse experience with a specific product, please call our company’s National Service Center at 800-444-2080. The center can assist you Monday through Friday from 8 a.m. to 7 p.m. Eastern time. Adverse experiences and product-related emergencies can be reported at any time by dialing 800-444-2080.

Although regulations vary by country, most countries require drug manufacturers to promptly review AE information they receive from any source, domestic or foreign, relating to the use of their products. Manufacturers are also required to have written procedures in place for evaluating and reporting adverse experiences.

In accordance with global regulatory reporting requirements, we have developed a written procedure to provide personnel worldwide—including all contractors—with a consistent and thorough process for identifying, evaluating and reporting AEs occurring in association with the use of our products. These procedures cover the reporting of AEs originating in clinical studies and those associated with the use of marketed products. Adherence to these procedures ensures timely and accurate monitoring of the safety profile of our investigational and marketed products globally.

To report an adverse experience to regulatory authorities, we need at least minimal information: the name of the product involved, the adverse experience, an identifiable patient and an identifiable reporter. In addition to submission of individual AE reports to regulatory authorities, either within 15 calendar days or periodically, we also file aggregate reports either quarterly, twice a year or annually, for as long as we market a product.

Our Risk Management & Safety teams review adverse experience information received from all sources (foreign, domestic, clinical trials, published literature, post-marketing) for our products and determine what actions may need to be taken with reference to the evolving safety profile of our products. These teams include physicians and epidemiologists who are trained to review this type of data.

It can be difficult to determine the exact cause of an adverse experience because many patients have more than one condition and may be taking multiple products. Our Global Safety staff takes great care to make sure that AE reporting is as accurate as possible. We review the data to determine if there are any patterns or emerging trends that need additional surveillance or action.

Employees responsible for monitoring and reporting adverse experiences undergo rigorous training every other year. New employees within our research laboratories—including all contract personnel—working in areas related to clinical research and global safety undergo training on our AE policies and procedures when they join the company. All other employees are trained in AE reporting procedures as part of our Code of Conduct training.

RESEARCH & DEVELOPMENT

CLINICAL RESEARCH

MAIN

We conduct clinical trials worldwide to evaluate the safety and efficacy of our products.

These trials are fundamental to the development of innovative medicines and vaccines that treat and prevent illness in humans.

Pharmacokinetics refers to what the body does to the drug, while pharmacodynamics refers to what the drug does to the body. If these initial tests are favorable, additional, larger Phase II studies are initiated to determine the effectiveness of the compound in the affected population, to define appropriate dosing for the compound and to identify any adverse effects that could limit the compound's usefulness.

In addition to disclosing results of clinical trials, we respond to requests from external researchers to share our clinical trial data.

If data from the Phase II trials are satisfactory, companies will invest in large-scale Phase III trials to rigorously evaluate the compound's safety and efficacy. Upon satisfactory completion of those trials, companies submit regulatory filings for marketing approval with the appropriate regulatory agencies around the world to have the product candidate approved for marketing.

It is our company's policy that all investigational studies in human subjects must be conducted in a manner consistent with laws, regulations and guidelines for the protection of human subjects, including those issued by The International Conference on Harmonisation Good Clinical Practice (ICH GCP). However, individual country regulations and guidelines should remain the primary determinant of specific requirements for the conduct of medical research.

Audits over the past four years that led to significant fines, penalties, warning letters or product seizures: Zero

Consistent with the trend in the pharmaceutical industry, significantly more than half of the patients participating in our clinical trials are enrolled outside the U.S., in more than 50 countries. We have a commitment to the study of diverse patient populations, including minorities, women and children in our clinical trials in all regions of the world. As a result, we strive to obtain information among diverse populations, ensuring a thorough evaluation of the safety and efficacy of our medicines and vaccines. These efforts allow us to seek regulatory approvals throughout the world and thereby offer our medicines globally to patients who need them.

Phase II-V Clinical Trials

PATIENTS BY REGION	2011	2012	2013	2014	2015
Asia Pacific	8%	16%	35%	49%	21%
Central & Eastern Europe, Middle East & Africa	5%	5%	8%	7%	7%
European Economic Area	19%	26%	33%	21%	22%
The Americas	16%	6%	10%	7%	5%
U.S.	51%	46%	14%	16%	46%

Trial Disclosure Activities

Manuscripts of clinical trial results and related papers submitted to peer-reviewed journals	245	238	137	146	216

CLINICAL TRIALS

Our company is committed to the timely registration of clinical trial information and the disclosure of trial results—regardless of their outcome.

We comply with all applicable laws and regulations associated with registration of clinical trials in publicly accessible registries and subsequent posting of the results from these trials. We have put into place the processes necessary for compliance with the Food and Drug Administration Amendments Act of 2007 and the European Medicines Agency (EMA) clinical trial Directive 2001/20/EC, including those related to clinical trial registration and posting results. Registration provides patients and physicians with information about clinical trials that are open and recruiting patients. Registration of trials and posting of results after trials are completed enable medical researchers to have timely information about our medicines and vaccines.

CLINICAL TRIAL REGISTRATION

We believe that clinical trial registries serve an important function for patients and their health care providers by enabling them to learn about and gain access to relevant clinical trials of experimental treatments or preventive agents. We continually assess changing global requirements for clinical trial registration and update our clinical processes and practices to make sure the company is compliant with them.

For those who analyze, report or publish the results of clinical trials, a clinical trial registry also provides information on trials in progress and the ability to track such trials over the course of development. We register clinical trials in patients of investigational and marketed products, in which treatment is assigned, that we sponsor and conduct on www.clinicaltrials.gov, www.clinicaltrialsregister.eu or www.encepp.eu at trial initiation.

For our position on clinical trial registries, click here.

DISCLOSURE OF CLINICAL TRIAL RESULTS

Our company has long been committed to sharing the results of our clinical trials, regardless of their outcome, in a timely manner. Clinical trial results will be disclosed by posting a results synopsis on the following publicly accessible websites: www.clinicaltrials.gov, www.clinicaltrialsregister.eu and www.encepp.eu. We also post trial results synopses on our corporate headquarters website.

Summary of Trial Disclosure Activities	2011	2012	2013	2014	2015
Manuscripts of clinical trial results and related papers submitted to peer-reviewed journals	245	238	137	146	216
Number of GCP/PV inspections conducted by regulatory agencies worldwide	104	44	149	99	119

If a clinical trial of a marketed product is terminated early for safety reasons, we will promptly disclose medically important information to regulatory authorities and the public, update the status on ClinicalTrials.gov within 30 days, and submit a manuscript to a journal (or post a summary online) within 12 months after the last patient's last visit occurs. If the trial was terminated for efficacy reasons, the results will be disclosed within 12 months after the last patient's last visit occurs. Summaries of terminated trials will provide information about patient disposition, safety and adverse experiences, as well as an explanation as to why the trial was terminated early.

For many years, our company has been committed to publishing results of hypothesis-testing trials in peer-reviewed medical literature. Our Publication Guidelines external reviewed Jun 2015 are posted online and have been in place, with periodic updates to incorporate any changes in good publication practices for industry-sponsored clinical trials, since 2003. In keeping with our publication guidelines, we disclose balanced and accurate information about our registered clinical trials in the peer-reviewed medical literature. These guidelines contain information about how we work with external authors and contributing writers.

We also adhere to the International Committee of Medical Journal Editors (ICMJE) guidelines for authorship, requiring that authors meet all of the following criteria:

- Make substantial contributions to study conception and design; or acquisition, analysis, or interpretation of data for the work
- Draft the article or revise it critically for important intellectual content
- Give final approval of the version to be published
- Be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Our company adheres to the authorship criteria of respected biomedical journals if their criteria differ from those of the ICMJE. In addition, individuals who do not meet the criteria for authorship, but who provide support, are recognized in acknowledgments when the manuscript is published. Our staff or contract writers whom we hire may facilitate the development of a manuscript when the lead author provides oversight and direction; the efforts of the writers will then be acknowledged in the publication.

Our company also adheres to ICMJE or journal-specific guidelines for disclosure of potential conflicts of interest, including

both financial and nonfinancial conflicts, for the full author team. Our Protocol Transparency Initiative, a voluntary practice of providing the clinical study protocol to biomedical journals upon submission of a manuscript reporting clinical trial results, allows journal editors and peer reviewers to use this protocol in their evaluation of the manuscript for publication. Further, if the journal accepts the manuscript, we allow the journal—at its sole discretion—to post key sections of the protocol on its website when the manuscript is published.

We are committed to the PhRMA/EFPIA Principles for Responsible Clinical Trial Data Sharing.

Learn more about our policies and perspectives:

- Procedure on Access to Clinical Trial Data
- Procedure on CSR Synopsis Posting
- External Scientific Review Board (ESRB) Charter

Scientific and medical researchers who wish to submit a proposal for access to our data may send an inquiry by clicking here.

ACCESS TO OUR CLINICAL TRIAL DATABASES

In addition to disclosing results of clinical trials, we respond to requests from external researchers to share our clinical trial data. We have multiple clinical trial databases that are of high value to the external clinical research community. We evaluate each request based on criteria that balance the need to advance science with the need to protect intellectual property and confidential information. Our evaluations comply with applicable privacy and data-protection laws, rules and regulations.

CLINICAL TRIAL DESIGN

All of our clinical trials are designed, conducted and monitored in accordance with the same global standards, whether they take place in the U.S. or elsewhere around the world.

We consider many factors when we design a clinical trial:

- **Our questions and objectives:** Clinical study designs vary according to the specific objectives of the study. For example, the design of a study to assess the efficacy of a medicine in treating a particular condition is different from that of one seeking to determine the optimal dose of a medicine in a particular group of people.
- **Statistical appropriateness and feasibility of conducting the study:** To make sure trial results are statistically meaningful, it is necessary before the trial begins to determine the number of patients needed to participate. It is also necessary to assess the feasibility of successfully conducting the trial.
- **Acceptability of the trial design by regulatory agencies:** When necessary, our Research Laboratories consult with regulatory agencies on design issues.
- **Ethical perspectives:** Enable patient diversity in our clinical trials to broaden the knowledge of the safety and efficacy of a new drug across different patient populations.

All of our company studies, regardless of the study design, use a standard format:

- The study objectives and endpoints (i.e., measurements) must be clearly stated before the study begins
- The hypothesis or scientific question being asked by the study must be clearly defined
- A plan for the analysis of the data must be developed before the trial begins and is finalized before the trial is completed

The benefits of this format include strengthening the scientific credibility and regulatory acceptability of the results and ensuring timely data analysis and publication of results.

CLINICAL TRIAL SITE MONITORING DESIGN, CONDUCT AND OVERSIGHT.

In addition to following our company's global standards, the conduct of our clinical trials adheres to the International Conference on Harmonisation Good Clinical Practice (ICH GCP) standards and to the principles that have their origin in the Declaration of Helsinki. Learn more about our policy on clinical trial ethics.

We seek input from local clinical investigators and external consultants with specific, relevant experience when designing our clinical trials. For early clinical trials in Phase II, studies are monitored on an ongoing basis by the clinical director and study team; when appropriate, an internal standing data-monitoring committee (DMC) of MRL senior managers reviews unblinded data from ongoing trials in a prespecified, scientifically acceptable manner. The goals of the DMC are to protect the safety of trial participants and assess whether the risk-benefit profile is favorable. The DMC's recommendations are communicated internally to relevant scientists and can be distributed externally to clinical investigators, review boards or regulatory agencies, as appropriate.

For all Phase III and other clinical trials intended to support registration, studies are monitored by the clinical director and study team. In addition, if unblinded data will need to be monitored to ensure patient safety or to make decisions about continuing a study, a DMC composed of external experts independent of our company is assembled to provide review and make recommendations to us about the further conduct of the study.

In addition, it is our policy to establish scientific advisory committees composed of external scientific leaders and our scientists. With the participation of these committees, we can obtain expert advice on the design of the trial, provide for transparent review and discussion of the data, and foster a collaborative approach to the publication and presentation of findings. We also have established a companywide, global approach for assessing clinical safety by implementing internal organ-specific safety boards to support the evaluation and management of organ-specific safety issues.

All protocols and related documents are reviewed and approved by external and independent Institutional Review Boards (IRBs) or Ethical Review Committees (ERCs). We require assurance that patients involved in trials, and/or their legal representatives, understand the procedures and the use and disclosure of personal health information, the use of biological samples, and the risks/benefits involved in a clinical study. A consent form, approved by both our company and the IRB/ERC and translated into a language familiar to the study subject, must be carefully reviewed and signed by all participants to document that their participation in the study is voluntary and informed.

Informed consent is obtained prior to initiation of any clinical study procedures, including those performed solely to determine eligibility for participation in the trial. In circumstances where patients receive payment or reimbursement for trial participation, this compensation is appropriate for the cost and inconvenience incurred and is clearly outlined in the consent form for full transparency. The consent procedures conform to applicable legal statutes and government regulations concerning research in human subjects and the privacy and security of medical information. If a prospective study participant cannot read the form, a patient advocate may read the consent form, with consent documented and witnessed.

In accordance with ICH GCP guidelines, trial sponsors should appoint clinical trial monitors who are trained to monitor the trial adequately. Accordingly, ICH GCP training is mandatory for all of our clinical research associates (CRAs) who monitor clinical trials, as well as for all contract research organizations (CROs) that monitor clinical trials on behalf of our company.

CRAs monitoring on behalf of our company will visit sites throughout the study to ensure that:

- The principal investigator and site staff are qualified and have adequate facilities and equipment to conduct clinical research throughout the duration of the study
- Site staff are adequately trained on the protocol, procedures and equipment
- Site staff adhere to protocol requirements, sponsor's development procedures (DPs) and ICH guidelines
- Clinical supplies are stored and dispensed per protocol
- Regulatory file documents are accurate and maintained per ICH guidelines and sponsor's DPs
- Source documentation, including drug accountability logs, is maintained per ALCOA (attributable, legible, contemporaneous, original and accurate) guidelines
- Subject safety is maintained through review of source documentation, including drug accountability logs
- Data reported to the sponsor are accurate and reported per sponsor requirements

PROTECTING PERSONAL HEALTH INFORMATION

We are a member of the International Pharmaceutical Privacy Consortium (IPPC), an association of research-based pharmaceutical companies formed in 2002 that has worldwide responsibility for the protection of personal health information

and other types of personal data. We have been actively involved in the IPPC since 2006, in order to engage in a constructive dialogue with European data-protection authorities and other regulators on privacy standards for biomedical research.

CONTRACT RESEARCH ORGANIZATIONS

Our company's primary clinical trial operating model includes the use of clinical research organizations on a limited basis. The use of CROs is generally reserved for circumstances such as:

- A company acquisition that includes clinical trial work already outsourced to CROs
- Clinical trial work that requires a large, rapid and global deployment of resources for a finite period of time
- Access to development markets that fall outside our development footprint
- Therapeutic indications that draw on a CRO's specific development expertise in areas that our company does not have specific development execution experience. This is infrequent given our breadth and depth.

When engaging a CRO, we perform rigorous capability assessments to ensure that the CRO has adequate procedures, infrastructure and expertise to ensure compliance with Good Clinical Practice (GCP) standards and is aligned with our own Code of Conduct.

Due diligence is performed and remedies implemented on CROs previously working for a company that is then acquired by our company. Clinical trial teams within our company oversee the studies being run by CROs, and periodic audits are performed on CROs with which we do business. If and when we identify violations of the contract or GCP standards, we work with the CRO on a corrective action plan.

If improvements are not made within a defined period of time, or if repeat violations are noted and unsatisfactorily remediated, we will limit and possibly cease future award opportunities with the CRO until the issues have been fully remediated. Importantly, our expectations of the performance of CROs we engage with are no different from the expectations we have for our internally managed projects.

POST-MARKETING

We regularly monitor the effectiveness and safety profiles of our marketed products and conduct formal post-marketing studies to evaluate signals of serious safety concerns about our products, including those requested by regulatory agencies.

We conduct several types of studies after approval, as appropriate:

- **Commitments to regulatory authorities:** For some products, regulatory authorities require companies to conduct additional interventional or noninterventional studies after the product is approved. A study could be required for multiple reasons, such as obtaining further information on the safety of the product. We work closely with regulatory authorities to design a study that will fulfill the specific requirement.
- **Epidemiological studies:** We have a long history of working closely with external experts in pharmacoepidemiology to understand the types of patients utilizing our products, as well as to examine the effectiveness and safety profiles of many of our marketed products as they are used in clinical practice in health care systems based in several different populations.
- **Pregnancy registries:** For some products, we have systems of active data collection that can facilitate the early detection of teratogenicity, substances or agents that can interfere with normal embryonic development, and other serious adverse experiences in patients who, inadvertently or purposefully, use a particular drug during pregnancy. Useful information about the effects of exposure in pregnancy can best be obtained by the careful collection and analysis of post-marketing surveillance data. Reports of the aggregate data in each registry are updated annually

and shared with regulatory authorities.

Post-Marketing Safety Studies

We monitor the use and safety of our products and we have a long history of conducting post-marketing safety studies to examine our products as they are used in clinical practice. Learn more about our post-marketing activities below. We also work closely with external experts in pharmacoepidemiology and drug utilization to examine the utilization and safety of our marketed products as they are used in health care systems based in several populations. These include Kaiser-Permanente (KP) Southern California, KP Northern California, United Healthcare, Pennsylvania and New Jersey Medicare, Harvard Pilgrim Health Care, Nordic Country Registries, the Clinical Practice Research Database and Mayo Clinic Olmsted County, Minnesota.

To see select post-marketing safety studies, please click here.

PERFORMANCE

Number of New Product & Device Registrations	2011	2012	2013	2014	2015
Asia Pacific	39	64	39	31	43
Central & Eastern Europe, Middle East & Africa	55	61	60	63	49
European Economic Area	28	29	28	22	22
The Americas	55	47	50	52	39
U.S.	2	3	2	8	3

Clinical Research Key Performance Indicator	2012	2013*	2014	2015
GCP/PV audits by regulatory agencies of the company or clinical trial investigators that led to significant fines, penalties, warning letters or product seizures.	0	--	0	0

* Complete Response Letter Received for Sugammadex (MK-8616)

RESEARCH & DEVELOPMENT

ANIMAL RESEARCH

Laboratory animal research is indispensable to the discovery, development, manufacture and marketing of innovative medicines that treat and prevent disease.

Our company is dedicated to the ethical and responsible treatment of all animals used in the development of medicines and vaccines. Decisions regarding animal care, use and welfare are made by balancing scientific knowledge and regulatory requirements with consideration of ethical and societal values.

Any investigator proposing a study that may involve discomfort or distress, even if it is relieved by analgesics or anesthetics, must perform a literature search to assure that there is no other viable alternative methodology. It is important to note that a large variety of non-animal (in vitro, or test tube) studies are performed at our company prior to or instead of animal studies. Research animals are used only to answer important scientific questions or fulfill a regulatory requirement. Animals involved in research within MRL are all specifically bred for research purposes.

> “To promote our commitment we subscribe to the “3 Rs”—replacement, reduction and refinement—for animal-based research.”

In our research laboratories, more than 97 percent of the research animals are rodents. The care and use of laboratory animals in biomedical research is highly regulated. In general, the regulations govern housing, feeding, veterinary care and research project review by the The Institutional Animal Care and Use Committee (IACUC)/Ethical Review Committee (ERC) as well as unannounced government inspections. Our animal facilities are staffed with veterinarians and professional animal care technicians trained and certified as research-animal experts.

ANIMAL RESEARCH OVERSIGHT

Animal research is highly regulated and monitored by the government and it is also internally monitored by our Animal Welfare Compliance department. A veterinarian with expertise in animal welfare and laboratory animal medicine manages the oversight group and works closely with our company’s Institutional Official (IO) for our Research Laboratories and our

Manufacturing Division, as well as the IO for Animal Health division, to provide independent monitoring of animal research globally. The IO regularly communicates with senior management and our internal compliance committees, as required, to address animal welfare issues.

Additionally, all of our company sites hosting animal-based research have active and engaged IACUCs or ERCs that review, approve and monitor research studies. The committee membership includes veterinarians and scientists knowledgeable in animal-based research and often includes nonscientists and community members. Committees review proposed animal studies and animal care facilities and investigate, as appropriate, any research-animal welfare concerns. The IACUCs/ERCs regularly communicate with and provide status reports to our company's IO regarding animal welfare compliance.

Global policies and guidelines governing appropriate animal research practices are in place and kept up to date. These standards for the care and use of animals in studies meet or exceed applicable local, national and international laws and regulations. U.S. regulations and annual inspection results can be found at www.aphis.usda.gov/animal welfare/index.shtml. As further evidence of our commitment to the highest level of animal care, our research sites voluntarily secure a third-party review and accreditation of our animal research programs and facilities by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC), an external, independent organization. As of the end of 2015, all of our research facilities are accredited by AAALAC.

As of the end of 2015, all of our research facilities are accredited by AAALAC.

Our scientists whose work involves research animals are trained to perform the duties required. Training includes review of regulations and policies, instruction on how to search for animal research alternatives, explanation of the role of the IACUCs/ERCs and training on how to raise concerns about misconduct. Qualified veterinarians work with the scientific staff to consult on and assist with all animal-related research projects. Our company places high value on its animal welfare stewardship responsibility; violation of these policies is grounds for employee disciplinary action, up to and including dismissal.

CONTACT RESEARCH

We perform due diligence on and monitor external laboratories that perform animal studies on our behalf, and hold them accountable for the same regulations and standards that govern our internal animal research. Animal studies may not begin until a site has been approved by our Animal Welfare Compliance Assurance Group. All agreements with contract laboratories include terms regarding our company's expectations for animal care and use as well as regulatory compliance. Additionally, animal research conducted at third-party laboratories is subject to protocol review by a company's IACUC/ERC or an equivalent committee. Noncompliance with regulations or standards can lead to termination of the relationship.

SUPPORT FOR ANIMAL SCIENCE AND RESEARCH-ANIMAL WELL-BEING

We also advocate for the development of best practices and dissemination of information by supporting and participating with nongovernmental organizations to foster a greater understanding of biomedical research, advancements in research-animal science and development of alternatives to animal use.

REPLACEMENT, REDUCTION AND REFINEMENT

We are committed to the philosophy of using the best scientific methodologies and animal alternatives whenever possible or permissible by law. To promote this commitment we subscribe to the "3 Rs"—replacement, reduction and

refinement—for animal-based research.

Replacement—using nonanimal systems or less-sentient species (for example, cell cultures, computer modeling, bacterial assays, and fly or worm models). Our scientists have access to specialized software that searches the scientific literature for viable alternatives to animal research. In addition, the company employs information specialists in our research library, trained by the Animal Welfare Information Center of the U.S. National Agricultural Library, to assist our scientists in identifying potential animal alternatives. We also have extensive in vitro expertise and investments, including an in vitro department that develops and utilizes nonanimal research methods (cell cultures) in the discovery and development of new medicines and therapies, and experts in computer modeling and simulation.

Reduction—using the minimum number of research animals necessary to obtain valid scientific data. Sophisticated animal models that yield precise data, such as telemetric monitoring models that monitor ECG and blood pressure, reduce the number of animals needed. In addition to state-of-the-art data collection and sharing systems, we have statisticians on staff who advise on study design and analysis in order to minimize the number of animals included in a study.

Refinement—minimizing distress or discomfort. Our scientists conduct extensive literature reviews to choose the best scientific models and design the most effective studies. When animals are required for a study, anesthetics, analgesics and tranquilizers are used whenever possible to minimize or eliminate potential pain or distress.

Our company's Animal Welfare group collects, promotes and internally disseminates information on the principles and practice of the 3 Rs. Training on the 3 Rs is part of staff orientation for animal research. It is our responsibility to use the most appropriate methodology and to aggressively seek scientifically valid 3-R approaches to animal research. As an example of the third R, Refinement, we have created a world-class imaging department that allows scientists to view cancers and other pathologic diseases in animals and monitor the long-term effectiveness of new treatments in a noninvasive manner. In addition, we have voluntarily made the decision not to use chimpanzees (or to fund their use directly or indirectly in studies by external research partners) in biomedical research in the foreseeable future. Recent scientific advances now allow researchers to use alternative methodologies that in many circumstances replace the need for chimpanzees in biomedical research.

INTERNAL ANIMAL ALTERNATIVE AWARD

Since 1994, in support of the 3-R philosophy, we have presented an Animal Alternative Award annually to the team or teams of our company's scientists that develop new techniques to support the alternative principle and publish their work to share innovations with the greater scientific community. Awards have been given for reducing the number of animals used by utilizing sophisticated telemetric monitoring, replacing a dog model with a guinea pig model and applying imaging techniques such as MRI to reduce the number of animals needed for tumor studies.

RESEARCH & DEVELOPMENT

REGENERATIVE MEDICINE

Many of the most advanced scientific technologies in regenerative medicine involve animal or human embryonic stem cells.

Together with the scientific community, we believe that research using stem cells has the potential to help identify medicines, therapies and vaccines that will treat, cure or prevent diseases and alleviate the suffering of patients with significant unmet medical needs. Examples include Parkinson's disease, cancer, cardiovascular disease, diabetes, osteoarthritis and trauma. We have been conducting research into the biology of stem cells for more than a decade. This research has involved the use of animal and human stem cells, as well as induced pluripotent stem cells.

> We have been conducting research into the biology of stem cells for more than a decade.

We conduct research using stem cells in full accordance with all applicable laws and regulations and our own internal research policies. Our research policy involving stem cells is guided by the U.S. National Academy of Sciences as well as the International Society of Stem Cell Research guidelines. Our company's Regenerative Medicine Oversight Committee, which comprises both internal and external experts, oversees company-sponsored research involving stem cells, including highly targeted research using human embryonic stem cells, stem cells developed through somatic cell nuclear transfer and induced pluripotent stem cells. The committee is responsible for ensuring that all projects involving stem cells adhere to our policies.

RESEARCH & DEVELOPMENT

SCIENTIFIC EDUCATION INITIATIVE

We're collaborating with academia, globally, to educate tomorrow's doctors about biopharmaceutical development.

The rigorous curriculum of medical school is designed to give future physicians the information and skills they need to begin clinical practice. For most, clinical practice will inevitably mean prescribing a medicine or vaccine to a patient. Yet few medical students are trained to understand the drug development process or how pharmaceutical research can be applied to patient care. In 2010, our company and the Yale School of Medicine collaborated to bridge this knowledge gap.

Our Drug Development Program, in partnership with Yale University, is a comprehensive, six-module, seven-hour Web-based course established for second-year medical students and graduate students in health sciences, and includes a new module on vaccine development and clinical vaccinology.

The Scientific Education Initiative in Japan plans to double the number of schools in the next 12 months.

Authored by our company's scientists and medical professionals and approved by Yale faculty, the program has been used by more than 60 academic institutions in 20 countries. It consists of an interactive course that takes students through the development process, from target identification and validation through the clinical trial, the regulatory review process and post-approval monitoring.

A second course, the Principles of Clinical Research and Design (PCRD), was developed in 2011 in response to a call for action from the NIH Clinical and Translational Science Awards (CTSA) program to foster new collaborations between academia and industry. Additionally, many universities outside of the U.S. requested information to help them better understand how clinical studies are designed and implemented. The course includes topics on both interventional and non-interventional studies, and addresses the concepts of bias and confounding, randomization, and blinding, among others.

Today, these courses are part of the Scientific Education Initiative in our Global Center of Scientific Affairs, within our company's research laboratories. The Web-based initiative focuses on working with academia to develop and share high-quality, balanced, unbranded education on translational science topics.

"With academia and industry working together to develop the educational materials; the program becomes more comprehensive, efficient, and sustainable. Some Japanese students and residents might have difficulties learning in English, therefore, it is our great pleasure to help translate and edit the education material into Japanese. I believe this e-learning can spread in Japan and contribute more knowledge and skills of the drug development and the clinical research to a broader academic audience."

Tsutomu Yamazaki, M.D., Ph.D.
Director and Professor
Clinical Research Support Center
The University of Tokyo Hospital

Since the Scientific Education Initiative was first introduced, the courses have been translated into five additional languages (Spanish, Mandarin Chinese, Japanese, Turkish and Russian). In Japan, the University of Tokyo partnered with our regional Medical Affairs office to ensure that the educational content was translated appropriately for the student audience and aligned with their educational needs.

The Scientific Education Initiative in Japan plans to double the number of schools in the next 12 months.

"I think with the recent focus on drug discovery and clinical developments in Japan, the Scientific Education Initiative provides an excellent platform for students and investigators in top academic research centers. Also, with increasing globalization in Japanese academia, international students find our program easy to use because it is available in six languages."

Rick Tsai, M.D.
Associate VP, Medical Affairs, Regional Medical Affairs
MSD Japan

English and Japanese versions of the new Web program are completed and content will be translated into four additional languages by the end of summer 2016. For additional information, contact request@msdscience.com.

RESEARCH & DEVELOPMENT

GENETIC RESEARCH

The rapid development of new technologies that interrogate variability in human DNA, combined with powerful computing hardware and software, has made it practical to investigate genetic determinants for risk of human disease or predictors of human response to drugs.

Our company conducts genetic research within our own clinical trials and in collaboration with external organizations that have collected human genetic samples and health data.

Collecting genetic samples is a critical foundation for human genetic research strategies. We collect genetic samples in our clinical trials primarily to understand how variable genetics impact patient response to the drugs. This enables us to communicate information to regulatory authorities and prescribers that will improve the use of our medicines. It also enables us to understand how genetics contributes to the underlying disease, which has potential to identify new drug targets for that disease. We also collect genetic samples outside of our clinical trials, often in collaboration with academic institutions or pre-competitive consortia. This is an important way of leveraging many of the large-scale biobanking efforts that are ongoing globally.

During clinical trials, we obtain appropriate subject consent for use of the genetic samples in accordance with the ethical principles that have their origin in the Declaration of Helsinki, U.S. FDA requirements (21 CFR 50.20, 50.25 and 50.27), the International Conference on Harmonisation (ICH) E6 Good Clinical Practices guidelines, and the 1997 UNESCO Declaration on the Human Genome and Human Rights.

When collaborating with external organizations, we ensure that consent has been obtained by individuals who have contributed DNA and/or health-related data to the organization via these same standards.

RESEARCH & DEVELOPMENT

BIOLOGICS AND BIOSIMILARS

We are focused on building our biologics capabilities and delivering high-quality biosimilar products to help meet the growing needs of patients and healthcare systems worldwide.

Biologics have revolutionized the treatment of patients suffering from some of the most debilitating and life-threatening diseases, and the potential for discovering novel biological therapies remains high.

In addition to our robust and expanding pipeline of originator biological products to address unmet medical needs, we believe high-quality biosimilars can improve patient accessibility to these lifesaving biological medicines across the globe, while respecting the intellectual property rights of the originator.

PORTFOLIO AND PARTNERSHIPS

We are developing a diversified portfolio of innovative biologic candidates targeting several important clinical indications, including immmuno-oncology and C. difficile infection recurrence.

In February 2015, we entered into a broad strategic collaboration with NGM Biopharmaceuticals, Inc. to discover, develop and commercialize novel biologic therapies across a wide range of therapeutic areas. The collaboration includes multiple therapeutic candidates currently in preclinical development at NGM, including one being evaluated for the treatment of diabetes, obesity and nonalcoholic steatohepatitis (NASH).

In September 2014, we entered into an exclusive worldwide licensing agreement (through respective subsidiaries) with Sun Pharmaceuticals Industries, Ltd., for tildakizumab, our investigational therapeutic antibody candidate currently in late-stage clinical trials for the treatment of chronic plaque psoriasis.

In 2013, we entered into an agreement with Samsung Bioepis Co., Ltd. to develop and commercialize multiple biosimilar candidates in our partnered territories. Since 2013, this partnership has made significant progress on a portfolio that includes biosimilar candidates in immunology, oncology and diabetes, with six late-stage biosimilar candidates expected to be filed with regulatory authorities in our territories.

PUBLIC POLICY

Our advocacy position on biologics and biosimilars is built upon a foundational objective of seeking to improve health outcomes while maintaining patient safety. All of our policies associated with biologics, biosimilars or any other drug regulation are motivated first and foremost by our focus on the patient.

Our advocacy recognizes the complexity of all biologic products, both innovator biologics and biosimilars, and seeks to establish sound policy parameters for development and use of biologics that ensure patients have access to high-quality, safe and effective medicines. Our policies regarding biologics and biosimilars are based on science and reflect a balanced approach consistent with our status as a developer of both biosimilars and originator biologics.

For more information, please refer to our public policy statement on Biosimilars and Originator Biologics.

RESEARCH & DEVELOPMENT

GLOBAL BURDEN OF DISEASE

Through a systematic and critical evaluation of our capabilities and an analysis of unmet medical needs, we prioritize our research and development efforts and focus on candidates that we believe represent breakthrough science that will make a difference for patients and payers.

Our current pipeline and list of marketed products are aligned with major global burdens of disease, based on the Global Burden of Disease 2010 (GBD2010) study.

Our company addresses 88% of the top 20 global burdens of illness.

Using the GBD2010 Visualization tools developed by the Institute for Health Metrics and Evaluation (IHME), the diseases that we address rank high on the list of worldwide causes of death. Our research into vaccines and infectious diseases addresses major burdens of disease that are prevalent in all countries, and our preventative treatments could have the greatest impact in the developing world, where healthcare infrastructure is weak or nonexistent. Considering our pipeline and the list of products we currently market, we estimate that our company addresses 88 percent of the top 20 global burdens of disease as defined by the IHME, excluding road injury, self-harm and preterm birth complications.

MANUFACTURING & SUPPLY CHAIN

MAIN

Our vision is to be the most trusted and competitive supplier of pharmaceuticals, animal health products, vaccines and biologics to the world's patients and customers.

Our company is committed to providing patients and customers with a reliable supply of high-quality, safe and effective medicines and vaccines. Our global supply strategy leverages both our internal manufacturing capabilities and those of external manufacturers that provide specialized skills, expertise and various types of manufacturing services.

We manufacture and package products that we distribute to more than 163 markets.

OUR COMMITMENTS

- We will maintain strict quality standards and effective supply-chain management to ensure the efficacy, safety and supply of our products no matter where they are manufactured
- We will sustain an interdependent, flexible supply chain to take into account global and local market supply needs
- We will engage and invest in local and regional partnerships to enable market access

We manufacture and package products that we distribute to more than 163 markets around the world. Our facilities, along with those of our external contractors, suppliers and partners, make up an integrated, interdependent global manufacturing network that is committed to delivering compliant, reliable supply to customers and patients on time, all the time, and every time.

GRI G4-PR1

Our product quality and safety processes and procedures are broad in scope and include stringent standards as well as compliance education and training. We also support industry and regulatory efforts to develop and optimize quality and manufacturing standards worldwide, including alignment with those of the International Conference on Harmonization (ICH). Our commitments in this area are unequivocal, and are essential to our role as a global health care leader.

GRI G4-12

We seek to develop the capacity and capability to serve a significant proportion of the world's population. Our manufacturing division has undertaken an ambitious program to reduce the cost of production by reducing underutilized capacity, increasing efficiency through Lean and Six Sigma projects at manufacturing sites, reducing procurement spending, and improving supply performance, including on-time deliveries and reduction of supply shortages.

We have entered into manufacturing and supply agreements with local manufacturing partners to broaden access to our products in local markets. We strive to forge relationships with partners that meet our standards for quality manufacturing and distribution, and today have 148 external manufacturing sites, 33 global alliances and 146 regional alliances that we engage with to provide access to our products.

We manufacture approximately 10,300 product size finishes, and in 2015 produced approximately 90 billion doses of animal health vaccines.

Our global supply-chain strategy is designed to ensure that we are operating a lean and efficient network while ensuring compliance with rigorous quality, safety and environmental standards.

We remain committed to the development and commercialization of our products and to ensuring that we are a reliable global supplier of quality vaccines and medicines.

We continue to optimize our manufacturing capacity for most vaccines, including, as appropriate, redundancy in our supply chain for certain vaccines, so that we eliminate supply disruptions when temporary issues arise in manufacturing. For example, we remain on track to have our facility in Carlow, Ireland, approved to fill GARDASIL®9 (Human Papillomavirus 9-valent Vaccine, Recombinant), our 9-valent HPV vaccine, in early 2017.

In addition, we have committed to investing $168 million to upgrade and expand our manufacturing operation in Elkton, Virginia. In future years we will upgrade plant infrastructure, add manufacturing-related facilities and equipment, and undertake a personnel-training initiative to support the bioprocessing environment.

TARGET '15

In 2010, we initiated Target '15, a five-year effort to make a difference in people's lives by making our medicines more accessible and affordable for the world's patients and customers. The effort, involving partnerships with local manufacturers as well as enterprise wide strategic planning, resulted in increased availability of our medicines as well as a more competitive company position for our products.

- A marked increase in ex-U.S. vaccine supply coupled with manufacturing cost reductions means that access to our vaccine products has grown dramatically over the last several years. For example, ROTATEQ® (Rotavirus Vaccine, Live, Oral, Pentavalent) and GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant] doses have more than tripled and are now available in over 60 and 90 markets, respectively.
- Our significantly increased (by 170 percent) supply volume of STOCRIN (efavirenz) for HIV in China supports increased local demand and combats a growing need for HIV medicine in China
- Significantly increased access to affordable, long-lasting but reversible contraceptive methods for women in developing countries is helping to lower maternal mortality rates. More than 19 million contraception implants have been produced since 2012.

We continue to focus on internal and external strategies that reduce cost and increase capacity to meet growing supply needs around the world.

PERFORMANCE

Manufacturing & Supply Summary	2012	2013	2014	2015
Number of local and regional manufacturing partnerships to enable access	84	68	104	179
Number of products available through local and regional partnerships[1]	34	354	499	1,157

[1]Increase represented in part by better visibility of global partner information.

MANUFACTURING & SUPPLY CHAIN

QUALITY & SAFETY STANDARDS

MAIN

In everything we do—from research and development to the manufacturing and distribution of our medicines, vaccines and other products—safety, quality and efficacy are our primary considerations.

Our quality strategy is focused on ensuring reliable, compliant supply to our customers, assuring that our products are there when people need them, and having an engaged and capable workforce to ensure and sustain future success.

GRI G4-PR1

We apply and adhere to a strict set of quality standards, and we have policies and procedures in place to identify, measure, control and sustain product-quality excellence. We continuously strive to improve these standards in order to enhance procedures and ensure ongoing compliance with Current Good Manufacturing Practices (CGMPs).

We maintain strict quality standards no matter where our products are manufactured.

All manufacturing facilities that we own and operate, and any company from which we purchase formulated pharmaceuticals, active ingredients and sterile products, must comply with Current Good Manufacturing Practices (CGMPs). These standards include requirements for incoming materials and the manufacturing, storage, handling and distribution of products.

Counterfeit products are a growing global problem and a serious threat to public health. We believe that maintaining the integrity of our supply chain is of paramount importance. Our corporate global anti-counterfeiting program has three primary goals: securing the supply chain; deterring, rapidly detecting and responding to counterfeit activity; and raising public awareness of the risks posed by counterfeits. To learn more about our anti-counterfeiting program, click here.

SUPPLIER SELECTION

We maintain strict quality standards no matter where our products are manufactured. Once we have made a decision to engage an external manufacturer, that manufacturer is required to comply with our business requirements set forth in the contract, regardless of geography.

We conduct audits of every potential new supplier of active pharmaceutical ingredients or formulated products and sterile products, to determine its acceptability and compliance with CGMPs. We review the systems that the potential supplier uses to purchase materials in order to ensure the quality of the products the supplier hopes to provide to us. Only if a supplier meets our stringent criteria, which include a review of the company's regulatory inspection and outcome history, will we then negotiate a commercial agreement. These agreements include detailed provisions relating to the quality standards we require suppliers to uphold in order for them to manufacture a product for our use. To learn more about how we work with external suppliers, click here.

AUDITS AND INSPECTIONS

Our manufacturing facilities are inspected by international health authorities. In 2015, we had 90 regulatory inspections at our human health and animal health facilities. The majority of these inspections concluded with satisfactory outcomes. We work with health authorities to address any concerns and assure acceptable conclusions to all inspections.

We conduct periodic audits to further ensure that suppliers continue to meet CGMPs. Through such audits, we evaluate the continued acceptability of the facility from a quality assurance and regulatory compliance perspective.

The frequency of quality auditing depends on a number of factors, including:

- The nature and complexity of the product being manufactured (e.g., whether it is a formulated pharmaceutical, active ingredient or sterile product) and how it is used by our company
- The degree of reliance on supplier test results and previous audit results

Quality tests are performed on all active pharmaceutical ingredients that we purchase as part of our overall supplier-qualification process, and further tests are performed during subsequent stages of manufacturing. Quality tests are performed on all formulated products before we release them to the marketplace.

Testing of chemicals used in the manufacturing of our products is conducted in accordance with our specifications, which in many cases include the applicable Pharmacopeia standards (i.e., the United States Pharmacopeia [USP], the European Pharmacopeia [EUP] and the Japanese Pharmacopeia [JP]). The USP is the official standard for all prescription and over-the-counter medicines, dietary supplements and other health care products manufactured and sold in the U.S. These standards are also recognized and used in more than 130 countries.

EDUCATION AND TRAINING

We provide appropriate and ongoing training on quality and CGMPs for our employees, to ensure that they are prepared to perform their duties effectively. Our system not only ensures that all applicable employees are trained, but also monitors the effectiveness of training.

PERFORMANCE

GRI G4-PR2

Quality & Product Safety	2011	2012	2013	2014	2015
Number of product recalls in the United States[1,2]	0	4	2	3	3
Annual percentage of units manufactured/sold and recalled during a given year (our global recall rate)[1,2]	NR	0.19%	0.11%	0.22%	0.07%

NR: Not reported.
[1] Definition of Recall Classifications:
http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm049070.htm#RecallClassifications.
[2] Beginning in 2014, product recalls include data from our Animal Health business.

In 2015, we initiated a total of three product recalls in the U.S. These were voluntary actions undertaken by the company as part of our commitment to ensuring product quality. These recalls specifically included one human health product Class II FDA recall, one human health product recall through the Consumer Product Safety Commission, and one animal health product Class III FDA recall. The recall classifications were determined by the FDA, after consultation with our company.

MANUFACTURING & SUPPLY CHAIN

ANTI-COUNTERFEITING

MAIN

Since 2009, we have invested in a rigorous, intelligence-led anti-counterfeiting strategy. The program today is recognized as an industry-leading effort.

Producing, distributing, marketing and/or selling counterfeit pharmaceutical products are serious criminal offenses, and the threat of these actions has become a real and significant risk to global public health. Counterfeit pharmaceuticals can include the wrong doses of an active ingredient, no active ingredient or, in some cases, harmful or poisonous ingredients.

We define a counterfeit medicine as a product that exhibits an unauthorized use of trademark, trade name, other identifying mark, imprint or device, or any likeness thereof, to adulterate, falsely purport or falsely represent a product's or material's identity, source or history. As counterfeiters have become more sophisticated, counterfeit products have become so similar in appearance to authentic products that, without laboratory testing, it is often difficult to tell the authentic from the counterfeit medicines.

The threat to patient safety from counterfeit medicines is not specific to our company. Consequently, we work with industry peers and proactively share anti-counterfeiting intelligence with other pharmaceutical companies as a way of protecting the public and raising awareness.

COMMITMENTS

- Continue in the execution of a proactive, worldwide corporate anti-counterfeiting strategy focused on securing the supply chain, detecting and responding to counterfeit events, and raising awareness of the risks of counterfeit pharmaceutical products
- Take proactive measures to identify, assess and mitigate threats to our patients associated with counterfeit and other fraudulent products
- Take actions to raise public awareness of the risks posed by counterfeits and advocate for increased enforcement to shape relevant regulatory requirements
- Train key stakeholders and business partners in the identification of suspicious activities and/or suspected counterfeit products
- Continue to partner with industry groups to provide advocacy on high-priority anti-counterfeiting policy initiatives, and explore new partnership opportunities with patients and other external stakeholders
- Develop metrics to gauge the impact of specific actions to ensure that resources remain focused on the areas that can have the greatest benefit

- Continue advocacy efforts to support the development of a standardized system to identify and code medical products, following the passage of the Drug Quality and Security Act (DQSA) in the U.S.
- Develop data analytics and intelligence management capabilities to enhance threat detection and mitigation activities associated with counterfeit and other illicit events, including increased levels of intelligence-sharing within the Pharmaceutical Security Institute (PSI) and other public and private partnerships
- Comply with all DQSA reporting requirements and associated actions regarding suspect and illegitimate products impacting the U.S. patient population, as set forth in the regulation

ANTI-COUNTERFEITING STRATEGY

Ensuring product efficacy and patient safety and protecting our reputation are paramount. We maintain a comprehensive, worldwide anti-counterfeiting strategy and operational program that has three primary strategic deliverables:

- **Product & Supply Chain Security:** Enable product protection through the use of sophisticated product-security features and supply chain security measures.
- **Investigations & Enforcement:** Deter, detect and respond to suspected and/or confirmed counterfeit activity in ways that mitigate risks to patient safety.
- **Advocacy, Engagement & Awareness:** Raise public and stakeholder awareness of the risks posed by counterfeits, and advocate for increased enforcement to shape relevant regulatory requirements.

To focus our work in this area, our Anti-Counterfeiting Steering Committee oversees our global anti-counterfeiting strategy to ensure that our goals are reached.

The cross-functional team is led by senior leaders from Global Human Health, Quality, Manufacturing, and Global Security. These areas are responsible for marketing and selling our products worldwide, investigating suspected counterfeit events, testing suspected counterfeit products, implementing innovative security measures, and preparing investigative reports.

Other functional areas involved in our anti-counterfeiting efforts include Legal, which manages trademarks and other forms of intellectual property and provides Global Security with information necessary to assist law enforcement and regulators in enforcement efforts; Global Public Policy, which coordinates our advocacy activities to support stronger anti-counterfeiting laws; and Compliance, which liaises with federal regulators in relation to the management of controlled substances.

ANTI-COUNTERFEITING OPERATIONS

In keeping with our long-standing commitment to providing high-quality, safe and effective medicines and vaccines to patients who need them, we have executed a comprehensive Anti-Counterfeiting Operations Program that delivers on our three primary strategic deliverables.

Product & Supply Chain Security

We carefully manage our supply chain through strict policies and procedures designed to keep the legitimate drug distribution system safe and secure. In the U.S., for example, we require customers to purchase our products directly from our company or from distributors authorized by our company. In addition, we publish the names of authorized distributors on our corporate website**.** We conduct risk-based audits of our distributors to ensure compliance with our policies and procedures. Proactive threat assessments are also completed for facilities and supply routes identified to be at risk of cargo thefts and other illicit activity.

Product-security features deployed on our products are a key measure taken to protect patients who use our products. Our pharmaceutical products are protected with best-in-class product-security features, uniquely applied on the basis of a global, risk-based assessment methodology. Our key focus in this assessment is the patient-safety threat should a counterfeit or illegally diverted product of our company be introduced into the supply chain.

Each of our new medicines and vaccines is assessed for risk using this methodology prior to regulatory approval. The risk level assigned to a new product is used to determine which product-security features will be included on the product and packaging prior to the product's market release. A complementary threat assessment is also performed on marketed products for which a credible counterfeit threat has been identified and for which updates to packaging security features may be required.

These product-security features, along with our advanced forensic detection capabilities, enable us to accurately

authenticate all finished products in our portfolio.

Serialization—or putting a unique identification number on each package that goes to market—is one of the tools we are investing in to secure our supply chain and prevent counterfeiting. A serial number on individual packages enables anyone along the supply chain—from a distributor to a pharmacist to a patient—to scan the code and authenticate it as a genuine product of our company.

Serialization adds a robust layer to the company's product-security platform. It provides the ability to uniquely identify and rapidly authenticate individual packs. When associated with a regulatory mandate that specifies effective implementation, this method of product tracking can become a more meaningful product-security tool.

Many jurisdictions around the world are requiring serialization on pharmaceutical packages or are considering such mandates. Serialization is required today in China, Turkey, Argentina, South Korea, Nigeria and India, and will soon be required in Saudi Arabia, Brazil, the U.S. and Europe. Unfortunately, each country's regulations are different, making it very challenging for our packaging sites and distribution networks to meet these diverse and complex requirements.

We responded by launching the Global Product Serialization Initiative in 2012, with the goal of meeting these varying requirements in a robust, standardized and effective way. We are working with industry associations and regulatory authorities to help shape these new requirements, and advocate for simple, standardized and common-sense regulations that can be effective at protecting against counterfeit medicines.

Investigation & Enforcement

Our company's anti-counterfeiting operations are driven by intelligence-led decisions to identify, prioritize and aggressively pursue criminal enterprises responsible for the manufacture and distribution of counterfeit and other illicit medications, and to identify and enable meaningful enforcement actions against those offenders.

We respond to every notification of suspected counterfeit or illicit medicine, in alignment with local regulatory requirements and in support of our global patient-safety mission. We also proactively conduct threat assessments and other risk-based operations to identify offenses that threaten the health and safety of patients. These proactive activities are intended to identify, assess and develop effective enforcement actions for high-value targets engaged in illegal activities involving our products that have the potential for negative patient-safety impact.

In 2015, the biggest risks to patient safety involved counterfeit versions of our company's products sold in multiple countries, some involving the legitimate supply chain. Several incidents of both inter-market and intra-market diversion of our pharmaceutical products, and multiple cargo thefts and product thefts from MSD or third-party facilities, are also a concern.

Global Security addressed 673 events in 60 countries in 2015 involving counterfeiting, diversion, product theft/loss (including cargo theft), tampering and brand security (non-company, unapproved generic products), which led to 228 arrests and the seizure of more than 500,000 dosages of counterfeit products.

Another key aspect of investigations is the forensic analysis of suspect products. This forensic testing is aimed at concluding whether a suspect product is counterfeit, diverted, or otherwise illicit. Counterfeit products are characterized in order to gain further intelligence and understanding of the counterfeiters and the threats to public health. Our company also has forensic detection devices in the field to analyze and detect counterfeits in regions around the world. As counterfeiters improve their skills and techniques, our forensic scientists have pioneered the use of several analytical tools for pharmaceutical-counterfeits detection, and continue to explore new analytical tools that would increase their forensic-testing capabilities. Lab findings are shared with regulatory and/or law enforcement agencies, and may be used to support subsequent enforcement actions and legal proceedings. There were 1,022 unique suspect samples received as evidence and prepared for forensic testing in relation to active events in 2015.

To support and enable enforcement actions, we partner with law enforcement agencies to detect and respond to threats from counterfeit products. This includes working with U.S. authorities on the importation of counterfeit pharmaceuticals and with EU authorities on the importation and/or transshipment of counterfeit pharmaceuticals through the EU. Working with customs authorities, we have helped identify high-risk ports, borders and postal depots, and have provided a framework of action for use by customs authorities to detect and respond to counterfeit activities. This training enables customs agents to identify suspicious pharmaceutical shipments and take appropriate actions to detain suspicious shipments and/or have suspect products analyzed.

Advocacy, Engagement & Awareness

We are committed to cooperating with relevant government agencies, other pharmaceutical manufacturers, wholesalers,

distributors, health professionals, consumer groups and key related organizations in fighting the problem of counterfeit pharmaceutical products and in educating the public about the risks of counterfeit products and how to protect against them.

This effort includes a multi-pronged approach to communicating the threat that counterfeit medicines pose and to mitigating this threat as effectively as possible, while recognizing that it cannot be entirely eliminated.

Collaboration and information-sharing in order to raise public and stakeholder awareness of the issue and risks are a crucial focus of our anti-counterfeiting program. Through active partnerships with other pharmaceutical companies, and with organizations focused on security, patient safety and public health, we provide effective advocacy on high-priority anti-counterfeiting policy initiatives.

Highlights of our 2015 activities include:

- We assisted in the creation of an Asia-Pacific Economic Cooperation (APEC) Online Pharmacy Best Practices Toolkit and Internet Pharmacy Survey for APEC health regulators and law enforcement, educating and engaging 19 APEC economies in the process
- In the U.S., we established strong relationships with key U.S. Government officials such as the U.S.T.R., U.S. Intellectual Property Enforcement Coordinator (IPEC) in an effort to promote intra- and intergovernmental action
- We contributed to an educational campaign that reached more than 70 million consumers in 2015, including coverage by major media outlets and scientific journals
- We supported independent academic research on how Twitter is being used by illegal online drug sellers to peddle drugs of abuse
- Our Global Security staff trained more than 4,300 law enforcement and customs officials worldwide

In keeping with our mission to protect global public health, we actively collaborate with international law enforcement agencies that prioritize the investigation, prosecution and disruption of counterfeit medicines and associated criminal enterprises.

We further support efforts to educate the public about the risks of counterfeit drugs and how to protect against them, as well as efforts to develop industry collaborations to support a unified response to the threat of counterfeit medicines. We have deep partnerships and/or leadership positions with the following organizations:

- Pharmaceutical Security Institute (PSI)
- Alliance for Safe Online Pharmacies—Global (ASOP Global)
- International Anti-Counterfeiting Coalition (IACC)
- International Trademark Association Anti-Counterfeit Committee (INTA ACC)
- International Federation of Pharmaceutical Manufacturer (IFPMA) Fight the Fakes partnership
- US Chamber of Commerce's Global Intellectual Property Center (GIPC)
- Partnership for Safe Medicines (PSM)
- Quality Brands Protection Committee of China Association of Enterprises with Foreign Investment (QBPC)
- Rx360 Consortium.

These collaborative efforts support the production of reports, white papers and data-circulation initiatives, as well as promoting the intelligence-sharing necessary to combat threats from counterfeit medicines.

PUBLIC POLICY

We support the increased enforcement of existing anti-counterfeiting laws and the adoption of new public policies to strengthen existing laws and enforcement programs, including increased criminal and civil penalties for

counterfeiters.

We advocate for such change in a number of ways:

- As a member of the Alliance for Safe Online Pharmacies – Global and ASOP-EU we support initiatives and advocacy in the U.S., Europe and Asia to raise awareness about the dangers of illegal online drug sellers and to steer patients to safe sources of medicines.
- As a member of the Global Intellectual Property Center, we support the White House's Intellectual Property Enforcement Coordinator as well as policy matters related to anti-counterfeiting and enforcement on the Hill and with Federal Agencies
- As a member of the Pharmaceutical Distribution Security Alliance (PDSA), our company supported the passage of the Drug Quality and Security Act (DQSA), U.S. legislation that creates a national system and uniform standards for tracking products across the pharmaceutical supply chain. PDSA includes over 20 partners in the domestic pharmaceutical distribution supply chain working to achieve a national solution toward product tracking.
- We support the Anti-Counterfeiting Trade Agreement, which increases protection against a wide range of intellectual property infringements
- In 1997, our company and other pharmaceutical companies created the Pharmaceutical Security Institute (PSI) to develop global security strategies focused on both prevention and enforcement in order to ensure public safety and product integrity. We continue to be an active participant in this organization, and are pushing for increased levels of intelligence-sharing among the members.
- Our company supported the SAFE DOSES Act, which was signed into law in the U.S. in October 2012. The bipartisan legislation modernizes the U.S. Criminal Code to increase criminal penalties for medical-product cargo theft and provides law enforcement tools to deter this criminal behavior and take down the organizations that are perpetrating it.
- Our company supported the Trade Facilitation and Enforcement Act, which was signed into law in the U.S. in February 2016. Known as the Customs Reauthorization Act, this bill provides additional resources to Customs and Border Protection (CBP), and formalizes the capacity for public-private partnership to strengthen Intellectual Property enforcement.

PERFORMANCE

In 2015 our company addressed 673 active product-integrity events. Approximately 60 percent of these events have been proactively investigated by Global Security to identify new or emerging product-integrity threats, or to further characterize and mitigate known product-integrity threats.

When a new product-integrity event is initially reviewed, it is assigned to one of five categories:

- Product Theft/Loss
- Brand Security
- Diversion
- Tampering
- Counterfeiting

The following table details the number of Suspected and Substantiated Counterfeit events handled in 2015. The category for any event can change as the event develops and further information is collected, typically as a result of forensic testing or other review of associated samples.

Summary	2011	2012	2013	2014	2015
Investigations of suspected counterfeit product	164	116	222	434	213
Substantiated cases of counterfeit product	106	48	40	107	123

ACCESS TO HEALTH

PRICING & COMMERCIALIZATION

MAIN

We are working to find new ways to bring our medicines and vaccines to more people around the world than ever before, and to make them as accessible and affordable as possible for the patients who need them. To that end, we strive to commercialize our products in a way that both develops our business and meets local needs in a responsible and efficient manner.

GRI G4-EC8

OUR COMMITMENTS

- We will price our products through differential pricing frameworks, taking into consideration the level of economic development, the distribution channel and the public health need
- Across and within countries, we will seek to identify innovative and sustainable strategies for differential pricing or other commercial approaches that allow for greater flexibility to better reach at-need segments, pursuing partnerships with private, government or nonprofit resources and distribution channels
- We will evaluate and address public health needs by working with local health care providers globally to increase knowledge of product need and use; we will invest in activities to improve patient awareness and education

In many countries, private health insurance plans are able to negotiate significant rebates and discounts with pharmaceutical manufacturers that enable patients to obtain health care and medicines at competitive prices.

We have differential pricing for 35 of our products, and 121 countries have implemented

inter- or intra-country pricing for at least one of them.

For people in the United States who do not have prescription drug or health insurance coverage and who, without assistance, could not afford our company's medicines or vaccines, our Patient Assistance Programs provide medicines and adult vaccines for free.

We recognize that in developing-world markets, access to and funding for health care can be limited. Therefore, we develop and support various sustainable strategies to improve access, including directing differential pricing to patient sub-segments. Currently, we have differential pricing for 35 of our products, and 121 countries have implemented inter- or intra-country pricing for at least one of our products. Our increased efforts to expand overall access to our medicines allowed us to surpass in 2014 our 2016 target of at least 30 products supported by differential pricing. More specifically, initiatives expanding innovative concession program offers for our hepatitis C virus and women's health product portfolios in low and middle-income markets, and renewal of our Pan American Health Organization (PAHO) agreement supported by additional price concessions covering several of our vaccine products, have contributed significantly to this notable increase of our differentiated prices in both the scope of our products and eligible countries. We remain committed to continued growth in identifying and implementing opportunities to support access through differential pricing.

In developing-world markets, our pricing strategies include directing differential pricing to at-need patient sub-segments, either directly through national or local programs or indirectly through third-party health care funding sources that demonstrate reasonable and secure product distribution to intended patient segments and subject to applicable legal requirements.

For example, we are engaged with stakeholders within the family planning community, including the United Nations Population Fund (UNFPA), Marie Stopes International (MSI), Population Services International (PSI) and the United States Agency for International Development (USAID), to support advocacy of the "Total Market Approach (TMA)" in key markets to help governments better target subsidized products, help the public sector focus on the poorest segments of the population, increase the ability of the private sector to serve middle-income tiers of the population, and decrease overall donor funding dependency. TMA leverages market efficiencies, helps expand equitable access, and encourages intra-country price tiers based on economic population segments. Learn more about our access approaches in low-income countries for our implantable contraceptive product IMPLANON®.

We believe that providing support through grants to third-party medical, scientific and patient organizations is an important way to advance mutual objectives to improve health and advance patient care. We have robust standards and policies in place to ensure that our grants support a full range of research and activities important to health care improvement. Learn more.

We will continue to champion innovative programs and partnerships to help increase the availability and accessibility of our medicines and vaccines for those who need them.

PRICING AND ACCESS

We understand that people are concerned about the costs associated with health care in general, and prescription drugs in particular. After all, we're patients too. That's why we are committed to doing our part to help more patients

obtain and afford the medicines and vaccines they need.

In keeping with George W. Merck's timeless wisdom that "medicine is for the people," we keep prices as low as possible for patients today while continuously pursuing the discovery of new medicines— and making the critical investments that will empower our scientists to invent the cures and treatments of tomorrow.

We approach pricing our medicines and vaccines from the perspective of value. And while value can mean different things to different people, to us it means maximizing our ability to provide something priceless—better health—to as many patients as possible. It also means doing as much as we can to prevent the problems, from lengthy hospital stays to long-term care, that are a financial burden to so many families, communities and public institutions.

Many factors go into the pricing of drugs, and every medicine is somewhat different, but in simple terms we consider the **"Three Ds"** of pricing: the **Demand** in society, all that goes into **Development**, and how well a medicine **Delivers**. The societal demand means we look at how critical the condition or need is in society and how many treatments, if any, currently exist. Development means we need to price medicines to pay for research, discovery and clinical trials. How well a medicine delivers means we look at the benefits of our drug, including how it can improve the lives of patients and their families, and how it can prevent other issues or the need for hospitalization.

While striving to maintain a consistent global approach to pricing, we also consider the national, competitive and regulatory conditions within each market, including the ability and willingness of various customers—such as national, regional or local institutional payers, physicians, employers and patients—to pay for our products. The prices of our medicines and vaccines also reflect government regulation and currency fluctuation effects, and prices paid by consumers can be affected by duties and tariffs imposed on imported medicines and vaccines, as well as price markups by intermediaries, including wholesalers and pharmacies.

In the private sector, particularly in developed countries like the United States, price competition has been spurred by private health insurance plans. These payers are able to negotiate significant rebates and discounts with pharmaceutical manufacturers. Where competition exists among health insurance plans, patients are able not only to obtain health care and their medicines at competitive prices but also to take advantage of innovative pharmacy services that have improved the quality of pharmacy care.

We recognize that in developing-world markets, access to and funding for health care, particularly pharmaceuticals, can often be limited. In many of these markets, most or all of the cost of treatment is borne by the patient. We actively work to develop and support various sustainable strategies to improve access, particularly for economically at-risk patient segments. In terms of pricing, these strategies can include directing differential pricing to patient sub-segments, either directly through national or local programs or indirectly through third-party health care funding sources that demonstrate reasonable and secure product distribution to intended patient segments.

Our willingness to provide differential pricing strategies is evident for many of our products, including some of the best-in-class innovative brands in our HIV, hepatitis C virus (HCV), women's health, and vaccine-franchise areas. Several recent initiatives illustrate our commitment to expanding access and availability:

- We extended our current Gavi prices for GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant] and ROTATEQ® (Rotavirus Vaccine, Live, Oral, Pentavalent) for 10 years through 2025 to Gavi-graduated countries with Gross National Income (GNI) per capita not exceeding $3,200
- Within the scope of our partnership arrangement with Gilead, we have expanded the number of countries supported with reduced ATRIPLA® (efavirenz, emtricitabine, and tenofovir) pricing by approximately 29 percent over the last year
- We supported the Ministry of Health in Egypt with a lower differentiated price for REMERON® (mirtazapine) tablets, an antidepressant, allowing the government to offer 15,000 units of the product to eligible patients for free; we anticipate further growth in 2015
- Working with the Ministry of Health in Egypt, we expanded our commitment to providing equitable pricing arrangements for several of our products. Building on a program started in 2014 involving drugs for hepatitis-C and depression, we introduced new access pricing and patient assistance copay programs to expand access for several additional products for infection, hypertension and eye health.
- To assist patients in China not covered by the National Free Antiretroviral Program and needing access to our anti-retroviral medicine ISENTRESS® (raltegravir), MSD in China partnered with the HIV Medical Association to initiate a series of scientific educational programs to raise disease and treatment knowledge and awareness. These programs, coupled with a reduced price to patients, contributed to an estimated 156 percent growth in the number of

patients treated between August 2015 and March 2016.

We know there is more that needs to be done, and we want to do our part to help more patients obtain and afford the treatments they need. We are committed to continuing our efforts to develop access solutions, including flexible pricing programs, targeted as appropriate to address the cost burden for patients at need throughout the world.

Commercialization Summary	2011	2012	2013	2014	2015
Number of products that are supported with differential pricing[1,2]	NA	NA	24	35	35
Number of low- and lower-middle-income countries where inter- and/or intra-country pricing has been implemented[3]	NA	NA	70	114	121
Investment in patient- and provider-education programs (in millions)[4]	$97.8	$71.4	$61.3	$52.3	$80.0

NA: Not Available
[1] Differential pricing intended to facilitate access for the at-need population.
[2] Products include HIV treatments, vaccines and other patented products.
[3] Countries as defined by World Bank 2013 GNI Classification and includes UN-defined Least Developed Countries.
[4] In 2014, we adjusted the calculation basis for certain grants to ensure alignment with geographic and programmatic focus areas, resulting in refined figures for 2011-2013.

PERFORMANCE

Pricing & Commercialization Summary	2011	2012	2013	2014	2015
Number of products that are supported with differential pricing[1,2]	NA	NA	24	35	35
Number of low- and lower-middle-income countries where inter- and/or intra-country pricing has been implemented[3]	NA	NA	70	114	121
Investment in patient- and provider-education programs (in millions)	$97.8	$71.4	$61.3	$52.3	$80.0

NA: Not available
[1] Differential pricing intended to facilitate access for the at-need population.
[2] Products include HIV treatments, vaccines and other patented products.
[3] Countries as defined by World Bank 2013 GNI Classification; includes UN-defined Least Developed Countries.

NOTE: We have realized a notable increase in both products (+46 percent) and geographic scope (+63 percent) supported with differentiated pricing intended for at-need populations.[4]

To learn more about our product pricing, click on one of the links below:

- HIV Medicines
- Vaccines
- Women's Health Products

[4] It should be noted that year-over-year differential pricing performance metrics can be impacted based on timing of local market or third-party contract renewals and/or product life-cycle introductions or deletions. Therefore, increases or decreases in these pricing metrics should not be interpreted as anticipating level of trend growth in future years.

ACCESS TO HEALTH

HEALTH LITERACY

MAIN

We are committed to improving health literacy as part of our mission to improve health.

Health literacy is vital to achieving the best possible results from medical care, medicines and vaccines. We must partner with patients to promote their understanding of their medical condition or disease, the reasons they are being treated, and the appropriate use of their medications and other treatments. Doing so will result in minimizing safety issues and maximizing the benefit of using our medicines.

Since its inception in 1891, our company has pushed the boundaries of science with the hope and expectation that advancing scientific knowledge will lead to major advances in health.[1] We believe one way to improve global health care outcomes is to make medical and health information accessible to health care professionals and patients around the world.[2] Our commitment to improving patient health outcomes extends to our commitment to health literacy. We shared this perspective, that communication is indeed part of the cure, in the *Journal of Health Communication*.

Health economists estimate that low health literacy costs the American health care system $73 billion per year and the Swiss health care system between CHF1.5 and CHF2.3 billion per year.

Health literacy can affect a person's ability to access health care services, use services appropriately, adopt health-promoting behaviors, manage chronic conditions, navigate the health care system, and act on health-related news and information.[3]

Health literacy challenges can affect people of all ages, races, incomes and educational levels. Some population groups are

more vulnerable to low health literacy. They include the elderly, people with less than a high school education, people living in poverty, racial and ethnic minorities, and people with limited English proficiency.[4]

Those with limited health literacy are more likely to have chronic conditions and are less able to manage them effectively.[5]

In 2012, about one out of every two adults (117 million Americans) had at least one chronic condition.

Health literacy is essential in efforts to:

- Encourage use of appropriate preventive measures, e.g., health screenings, mammograms, recommended vaccinations
- Teach patients about health benefits, risk factors, and adherence to treatment plans
- Inform and alert the public about important health recommendations[6,7]

KEY DEFINITIONS

Health literacy (U.S. definition): The degree to which individuals have the capacity to obtain, communicate, process and understand basic health information and services to make appropriate health decisions.

Health literacy (EU definition): Health literacy is linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning health care, disease prevention and health promotion to maintain or improve quality of life during the life course.[7]

POOR HEALTH LITERACY IS A SERIOUS CHALLENGE

Health literacy challenges exist in all parts of the world. According to WHO Europe, people with strong health literacy skills enjoy better health and well-being, while those with weaker skills tend to engage in riskier behavior and have poorer health.[8] Health literacy also has an impact on the efficient use of health care resources. Health economists estimate that low health literacy costs the American health care system $73 billion per year and the Swiss health care system between CHF1.5 and CHF2.3 billion per year.[9] According to more recent research, low health literacy has been estimated to cost the U.S. economy between $106 billion and $236 billion annually.[3]

Our company recognizes the potential we have to help improve millions of lives by improving how we communicate as we shepherd discoveries from the lab to the marketplace. We also know it will take a multifaceted effort focused on public policy, engaging diverse stakeholders and new ways of communicating. Consequently, we are calling for collaboration among government agencies, health care providers, patient advocacy groups and health care companies to do more, together, to increase patient understanding of health care and treatment plans.

At a time when patients and family members are increasingly involved in their own care, clear communication at every point along the patient journey, from researching symptoms to seeking diagnosis to managing disease, is a crucial adjunct to the medicines we discover.

KEY HEALTH LITERACY PRIORITIES

Our company is committed to ensuring diversity in clinical trials, championing health literacy across countries and divisions, and proposing new solutions to improve health care equity around the globe. In the U.S., our goal is to create and model patient-centered innovative programs that foster health literacy. We publicly share best practices with other pharmaceutical companies and other stakeholders, demonstrating our commitment to improving patient health outcomes. We proudly participate in both the National Academies Health Literacy Roundtable and the Roundtable on the Promotion of Health Equity and the Elimination of Health Disparities.

Our vision in Europe is to ensure citizen- and patient-centered health systems. Health literacy is a key enabler for citizens and patients to take an active role with regard to their health. In addition, health literacy activities lead to better "readable" health systems where patients can easily navigate and receive the care needed.[10] Empowered citizens and readable health systems contribute to better health and more efficient health care.

We have been engaging in Europe with various stakeholders such as the European Commission, the European Parliament

and patient, physician, pharmacy and nurse associations toward those goals. In July 2015, the European Parliament Science and Technology Options Assessment (STOA) Committee hosted a seminar, “Health Literacy in Europe: Empowering patients—How can technology contribute to improving health literacy?” In September 2015, European Parliament member Françoise Grossetête was invited to a lunch debate on health literacy and personalized medicines.

Health literacy has gained attention among policy makers across Europe. The Council of the European Parliament refer to the importance of health literacy in the context of personalized medicines.[11] The “Riga Roadmap”—a joint declaration by industry, civil society and patient organizations—launched during the Latvian EU Presidency—calls for a regular EU health literacy survey across all EU member states to collect comparative data, and for investing in health literacy interventions.[12]

Finally, many affiliates of our company have translated health literacy into programs to improve the health of citizens and patients in high-priority areas such as diabetes or HIV/AIDS. We highlight some of our U.S. and global health-literacy initiatives in the next two tabs.

[1] Merck & Co., Inc. Corporate videos. Accessed: June 22, 2016.
[2] Merck & Co., Inc. “Helping the World Be Well”. Corporate presentation. Accessed: June 22, 2016.
[3] U.S. Department of Health and Human Services (HHS). Quick Guide to Health Literacy. http://health.gov/communication/literacy/quickguide/Quickguide.pdf. Accessed June 22, 2016.
[4] U.S. Department of Health and Human Services (HHS). Office of Disease Prevention and Health Promotion. National Action Plan to Improve Health Literacy. Washington, DC: Author. 2010.
[5] U.S. Department of Health and Human Services (HHS). Quick Guide to Health Literacy and Older Adults. http://health.gov/communication/literacy/olderadults/literacy.htm. Accessed: June 22, 2016.
[6] Berkman, ND, Sheridan, SL, Donahue, KE, et al. Health Literacy Interventions and Outcomes: An Updated Systematic Review. Evidence Report/Technology Assessment No.199. AHRQ Publication Number 11-E006. Rockville, MD. Agency for Healthcare Research and Quality. March 2011.
[7] Sorensen, K, et al. (2012), “Health literacy and public health: A systematic review and integration of definitions and models.” BMC Public Health, 12:80.
[8] WHO Europe (2013), Health literacy: The solid facts; edited by Ilona Kickbusch, Jürgen M. Pelikan, Franklin Apfel and Agis D. Tsouros; http://www.euro.who.int/en/publications/abstracts/health-literacy.-the-solid-facts (31/12/2015).
[9] Friedland, RB, O’Neill, G (1998), Understanding Health Literacy: New Estimates of the Costs of Inadequate Health Literacy; Fact Sheet of the National Academy on an Aging Society; see: http://www.agingsociety.org/agingsociety/publications/fact/fact_low.html; Spycher S (2006), Ökonomische Aspekte der Gesundheitskompetenzen. Konzeptpapier im Auftrag des Bundesamtes für Gesundheit, Berne; see: http://www.bag.admin.ch; Gesundheitsförderung Schweiz, Merck Sharp & Dohme-Chibret AG (Ed.) (2008), Die volkswirtschaftliche Bedeutung von Gesundheitskompetenz. Eine Studie, ein Gespräch am runden Tisch und drei Interviews, Berne, Zurich. [10] See: http://rigahealthconference2015.eu/wp-content/uploads/2015/08/Riga-Roadmap-download-FINAL.pdf. Accessed: May 13, 2016.
[11] AHRQ 2012 Health Disparities Report (page 5). http://archive.ahrq.gov/research/findings/nhqrdr/nhdr12/2012nhdr.pdf.
[12] Henry J. Kaiser Family Foundation. “Disparities in Health and Health Care: Five Key Questions and Answers.” December 2012.

U.S. INITIATIVES

SHAPING THE EXTERNAL ENVIRONMENT—HEALTH CARE PROVIDERS

While the skills of individual patients and caregivers are an important part of health literacy, there is also a need to reduce the complexity of the health care system. Poor health literacy and health care disparities may negatively impact quality, adherence and patient safety. Many payers, integrated health systems and large medical groups share our commitment to addressing these issues. Individuals with limited health literacy have a lower quality of communication with health professionals.[1] Patient-centeredness, cultural competency and health literacy may all play a role in reducing health disparities. By taking a systematic approach to promoting health literacy, medical practices and other health care organizations may help to improve the quality of patient care.

We have created and shared many resources about health literacy, and updated several of them this year. These updates reflect the widespread understanding across the health care system of the need to address health literacy. We updated background materials and speaker presentations, with a greater emphasis on actionable recommendations to foster health literacy and on cultural competency to improve the health care consumer experience.

SHAPING THE EXTERNAL ENVIRONMENT—PATIENTS / HEALTH CARE CONSUMERS

Patients require health literacy skills in order to understand and navigate the health care system, talk to providers, engage

in self-management, exercise basic numeracy skills, adopt healthy behaviors, and act on news and information.[2] Our consumer-engagement platform, available in the U.S., provides unbranded health-literate content in support of our pharma and vaccine brands. This multi-channel health and wellness program is designed to improve engagement and adherence, to help U.S. consumers strive to meet their goals for a healthy lifestyle, and to provide a platform to educate patients on real-time health-related issues.

Since 2014, we have had a leadership role in the Multi-Regional Clinical Trials Center (MRCT) Return of Results working group. This multi-stakeholder group, including representatives from patient advocacy, industry and academia, worked collaboratively to develop a health-literate template and supporting guidance document for returning results to clinical trial participants. In 2015, two of our employees were invited to participate in an EMA task force on lay summaries, in advance of an EU requirement to publish lay summaries by 2018. Again, patient representatives were part of this task force. The draft EU guidance issued in June 2016 features health literacy principles, numeracy, and clear examples. The EMA taskforce and the MRCT Center of Brigham and Women's Hospital and Harvard are aligned to create global, health-literate guidance and templates.

SHAPING THE EXTERNAL ENVIRONMENT—BEST PRACTICES FOR INDUSTRY

We continue to partner with academia to create a new approach to the development and testing of patient product labeling for new molecules. The purpose of the collaboration is to demonstrate improved patient understanding and use by optimizing the development and testing processes. The collaboration is between leaders in the field of health literacy at Northwestern University and Emory University and a cross-divisional team at our company, and addresses labeling, legal and regulatory policy. Best practices from the field of health literacy and patient feedback are incorporated throughout the development of patient labeling for new molecules. Patient input is provided several times: in focus groups during the initial development, and later to confirm comprehension of the final draft label for FDA submission.

Notably, our past approach included conducting market research across a broad range of education levels; however, few of the respondents who presented had limited health literacy. Such candidates are harder to locate, are less likely to participate and are not represented adequately in the databases of market research agencies serving the pharmaceutical industry. Northwestern University and Emory University helped us apply best practices from the field of health literacy to secure these respondents. This process has consistently achieved strong comprehension in respondents with both limited and adequate health literacy (90 percent or better in both groups in qualitative research). In March 2016, we published this innovative approach in *Quirks*, a magazine for market researchers. This was the first article ever in *Quirks* about health literacy, and generated significant interest. Our commitment to health literacy in patient labeling is also highlighted on the National Academies Health Literacy Roundtable website in a member spotlight here.

We received the 2016 health literacy research award from the Institute for Health Advancement for our patient labeling work. This was a noteworthy achievement, as it indicated a best practice not just for the industry, but also for the field of health literacy.

Importantly, we had our first two health-literate patient labels approved by the FDA, a key milestone both for patients, and as a model for others in the industry.

SHAPING OUR INTERNAL ENVIRONMENT

Health literacy is about the ability to deliver patient communications in an understandable and actionable way. We work to integrate health literacy principles into our patient-education materials. We launched an internal training program in late 2014, providing clear instructions to the creators of materials on how to implement health-literacy best practices. These best practices are derived from recent research in the field of health literacy, as well as from feedback we have already received from health care providers and patients themselves. Although this training was designed for creators of patient education in the U.S., it was widely used by employees in other divisions and countries in 2015.

We lead the industry in our commitment of resources to health literacy, with a full-time position dedicated to it; a special assignee working as a health literacy reviewer for patient education nearly full-time; and a market researcher spending about half her time on health literacy. There are many other champions across the company who have embraced health literacy and lead efforts within their own departments, including our manufacturing and research divisions. Although many pharmaceutical companies recognize the importance of health literacy, and have professionals who focus on health literacy as part of their responsibilities, we are one of only two companies in the pharmaceutical industry with a person fully dedicated to health literacy, working both inside and outside of our company to effect change.

DEMONSTRATING SCIENTIFIC EXCELLENCE

In 2013, we launched the Investigator Studies Program (MISP), focused on health literacy, diversity and adherence. This was the first program of its kind at our company that was not specific to a therapeutic area. Additional studies were funded in 2015, demonstrating our strong commitment to this subject.

In 2013, we partnered with Northwestern Medicine, Walgreens and Alliance of Chicago community health centers to collaborate on a study with a deceptively simple goal: to provide clear instructions on prescription medicine labels so patients don't make mistakes or overcomplicate taking their daily medications. In 2014, the electronic health record (EHR) and pharmacy systems were designed to support the study, and pharmacists and prescribers were trained. Patient enrollment began in 2015 and continued into 2016. It is a three-arm, physician-randomized "pragmatic trial" using usual care (control); UMS with EHR tools; and UMS, EHR tools and SMS text reminders for the first seven days following a new or changed prescription. The primary outcomes include self-management knowledge, prescription adherence, and measures of blood sugar control and blood pressure. Initial results are anticipated in late 2016.

To advance key discussions in health literacy, we were part of a small group of NAM Health Literacy Roundtable members who authored two perspective papers in early 2016, "Strategies to Enhance Numeracy Skills" and "Considerations for a New Definition of Health Literacy." They were well received, and by mid-2016 ranked among the top 15 most popular perspective papers ever published by the Institute of Medicine/National Academies.

[1] Koh HK, et al. "New Federal Policy Initiatives to Boost Health Literacy Can Help the Nation Move Beyond the Cycle of Costly 'Crisis Care.'" Health Affairs. 2012;31(2):434–443.?
[2] U.S. Department of Health and Human Services (HHS). "Quick Guide to Health Literacy." Fact Sheet. Basics. Available at https://health.gov/communication/literacy/quickguide/factsbasic.htm. Accessed: June 1, 2013.

GLOBAL INITIATIVES

We collaborate with various stakeholders in policy development for health literacy and support programs that improve the health literacy levels of citizens and patients.

In the EU, we do so together with European associations of physicians, pharmacists, nurses, patients and policy makers from the European Parliament and other EU institutions.[1] Our vision in Europe is to ensure citizen- and patient-centered health systems. Health literacy is a key enabler for citizens and patients to take an active role with regard to their health. In addition, health literacy activities lead to better "readable" health systems where patients can easily navigate and receive the care needed.[2] Empowered citizens and readable health systems contribute to better health and more efficient health care.

We have been engaging in Europe with various stakeholders such as the European Commission, the European Parliament, patients, physicians, and pharmacy and nurse associations toward those goals. Health literacy has gained attention among policy makers across Europe. Both the conclusions of the Council of the European Union and the "Riga Roadmap"—a joint declaration by industry, civil society and patient organizations refer to the importance of health literacy.[2,3]

AUSTRIA

Make the Good Choice—Fight Diabetes

Unlike many other diseases, diabetes is complex and therefore difficult to manage for patients. Managing diabetes consists of many components such as nutritional management, physical activity, medication, glucose monitoring, and psychosocial adjustment. In the fall of 2014, MSD Austria and the Austrian Pharmacist Association set up a program to enhance diabetes awareness, prevention and scaling-up of treatment. In collaboration with the Austrian Diabetes Society, a scientific

guidance for screening and counselling for pharmacists was developed.

In May 2015, all customers in pharmacies were invited to monitor their glucose levels. People with pre-diabetes levels (34.8 percent) received a free consultation and advice materials, and were encouraged to increase their physical activity and improve their nutritional habits. People with a stage of clinically manifested type-2-diabetes (9.5 percent) were encouraged to see a physician. Follow-up meetings with all identified-risk patients were arranged after three months.

Eighty-five percent showed up and had their HbA1c levels monitored again. Nearly half of the risk population (45.6 percent) had reduced their glucose levels to normal as a result of their lifestyle modifications. To enhance the existing data quality and improve the screening options, the project will be adopted and rolled out by the Austrian Social Insurance Authority for Business (SVA) in 2016.

Health Literacy Migrant Survey Austria 2015
Improving health literacy is one of the health targets of Austria in the context of the Federal Framework of Health Objectives. However, despite that recognition, there were still knowledge gaps in 2015. Little to no reliable data were available on the health literacy of important immigrant groups in Austria, whereas important findings from the education and health sectors indicated that immigrants in general, and non-EU immigrants in particular, had to be considered as vulnerable groups. That was one of the reasons for initiating the Health Literacy Migrant Survey in Austria, of which we were a part.

The objectives of the study were to collect qualitative and quantitative health-literacy data on immigrant groups in Austria, and to compare the health literacy of non-EU immigrants with each other and with the general Austrian population. A project-advisory board had been created in addition to the Project Steering Committee, comprising representatives from the Federal Ministry of Health; the Ministry of Labour; Social Affairs and Consumer Protection; the State Secretariat for Integration; City of Vienna; Volkshilfe Austria; and immigrant groups. The Project Steering Committee consisted of the Austrian Social Security Body, the Austrian Health Institute (MoH) and MSD Austria. The successful collaboration and the data generated provided relevant information for decision makers and stakeholders in the health sector and health policy, and have gained increasing importance with regard to the current migrant crisis in the European Union.

BELGIUM

Well Done–MSD Health Literacy Awards 2015

The Well Done–MSD Health Literacy Awards recognize and reward projects in Belgian and Luxembourg that make a significant contribution to the health literacy of citizens. This project involves close collaboration between MSD and key stakeholders, including patients and health care practitioner (HCP) associations, sick funds, members of parliament, and the National Institute for Health and Disability Insurance.

The 2015 edition resulted in 52 health-literacy projects (an increase of more than 40 percent since 2014) that were analyzed, from which three were selected for the First Line, Specialty Care and Community Awards of €3,000 each. This initiative opened up a lot of opportunities for collaborating with important stakeholders and showed MSD's commitment to health literacy, a topic that is high on the Belgian political agenda. See more information on this initiative here.

Belgian Health Literacy Survey 2015
MSD Belgium initiated a survey in 2015 to assess the perception of the health literacy level of chronic patients with hypertension, diabetes or asthma. For this survey, conducted by Professor Stephan Van den Broucke, a renowned health-literacy expert from the Université Catholique de Louvain, 450 patients and 360 HCPs were interviewed.

It concluded that patients have a better perception of their health literacy levels than do HCPs. The pharmacist, after the physician, is a very important source of information for the patient. Thirty-four percent of the patients interviewed also report consulting other information sources (e.g., internet), but to a much lesser extent than physicians think. The study also reveals that patients with a better health literacy level are more compliant with the advice and guidelines they receive from their physician.

GERMANY

MiMi Diabetes

MSD has been supporting the migrants project MiMi ("With Migrants for Migrants"), founded by the Ethno-Medical Center in Hannover, Germany, since 2012. The MiMi project builds on two pillars: German-speaking migrants are trained on health care issues and learn to teach other migrants in their mother tongue, and the organization publishes multilingual guides

(e.g., in Arabic, Russian, Turkish, English) on those topics. MSD and the Ethno-Medical Center started cooperating on diabetes and broadened its focus to maternal health in 2014. In 2015, in an initiative by the MSD sales forces, MSD and the Ethno-Medical Center organized an informational event for physicians titled, “Diabetes in Different Cultures.” Ramazan Salman, founder of the Ethno-Medical Center, spoke at various MSD events about the importance of culture-specific health care and a healthy integration of migrants.

In 2015, the Ethno-Medical Center opened its first office in the metropolitan region Rhein-Neckar (including the cities of Mannheim, Ludwigshafen, Heidelberg)—a region notable for its high number of migrants and refugees. In November 2015, the organization started training German-speaking migrants on the topic of maternal health. Most of the participants already work as health care professionals, teachers or coaches, and many of them are also engaged in German refugee aid—some of them on a voluntary basis, others full-time. After their training, these coaches will start to teach other migrants in their mother tongue about maternal health.

Scabies Outbreaks: Providing Access to STROMECTOL®
In 2015, Europe, and especially Germany, faced a huge number of refugees seeking asylum who were at increased risk for easily spreadable diseases such as scabies. In this context, German authorities asked MSD to provide people with access to STROMECTOL®. MSD Germany not only helped to make the product accessible—it was only approved in the Netherlands and France—but also provided product-specific and patient-relevant information which was translated into several languages (including Turkish, Farsi, English). Consequently, refugees were granted access to important health care information.

Drug Safety in Oncology
In recent years, major breakthroughs have been achieved in the field of oncology—offering cancer patients and their families new hope. Nevertheless, these innovations also require adequate education. MSD created educational materials that were discussed with patient organizations and physicians’ associations. In addition, the materials were translated into English, Russian and Turkish.

Patient-Friendly Package Inserts
Since 2009, MSD Germany has been cooperating with patient and senior organizations to adjust its package inserts for better comprehensibility, readability and patient-friendliness in order to enhance patients’ adherence and health outcomes. In 2015, MSD entered a dialogue with the Minister of Social, Health, Women, and Family in the German state of Saarland on the importance of adjusting package inserts. While MSD shared its experience on the process of adjusting, Minister Bachmann called for a corresponding initiative in the upper German parliamentary chamber, the Bundesrat.

German Coalition for Patient Safety
MSD has been a member of the German Coalition for Patient Safety since 2010. The coalition aims at improving safety in health care, and collaborates with professional and patient associations, societies, insurance organizations, self-governmental bodies, and research institutions. The Federal Ministry of Health is one of the organization's sponsors, and the German Minister of Health, Hermann Gröhe, has offered his patronage. In 2015, the organization celebrated two special occasions: its 10th anniversary and the first International Day of Patient Safety, which focused on “Hygiene and the Prevention of Infections.” MSD supported this day of action with an awareness campaign for its employees.

HUNGARY

HLS.HU

One out of two Hungarians has insufficient health literacy levels, according to industry-supported health literacy research. Under the leadership of MSD, the Association of International Pharmaceutical Manufacturers (AIPM) created a separate working group on health literacy with the purpose of replicating the European Health Literacy Survey (HLS.EU). The data were presented in Brussels in late autumn 2015 and in a subsequent large press event in Budapest. As a next step, the working group is providing education on the findings and engaging with stakeholders across governmental and professional bodies, as well as patient associations.

In addition, health literacy appears not to be on the public health agenda, nor does the term “health literacy” exist in Hungarian. To close this gap, a reference group has been initiated consisting of representatives from all relevant stakeholders to help guide future activities and initiatives. Building on experience from Belgium, a Health Literacy Award was announced by AIPM in late May 2016, and health literacy topics will be introduced at all relevant professional congresses.

IRELAND

Accredited Health Literacy–Friendly Pharmacies and General Practices

In 2015, MSD in Ireland launched the Crystal Clear Mark and Audit Programme, the first independent accreditation for "health literacy–friendly" general practices and pharmacies. MSD, the National Adult Literacy Agency (NALA), the Irish Pharmacy Union and the Irish Department of Health partnered to launch the Crystal Clear Pharmacy and GP Audit Programme, which allows pharmacies and general practices to apply for a quality mark recognizing their health care setting as health literacy–friendly. The program includes online education for health care professionals and an online self-completion audit that is subsequently assessed by NALA health literacy experts.

Following successful completion of the audit, the health care setting is awarded the Crystal Clear Mark. Feedback from customers on this program has been very positive, as it puts patients' needs at the very center of how their service is delivered. The program also encourages continuing education and helps pharmacies differentiate their business. The NALA plans to extend this program to other setting such as hospitals, social welfare offices and citizen advice bureaus.

ITALY

Volere Non Basta ("Asking for Something Is Not Enough")

In 2015, the Fondazione MSD, in partnership with Rome Sapienza University and Milan Engineering School, designed and sponsored a long-term educational plan to train patients to communicate in an effective way and to be able to use empowerment tools appropriately. The program is based on patient associations' emerging needs to be heard more clearly through media and to act as protagonists in their own "patient journey" as well as in the policy decision-making process.

The 2016 edition will be implemented in partnership with the Italian Observatory of Narrative Medicine (OMNI) and the Center for Digital Health Humanities, under the aegis of National Institute of Health. Its focus will be digital narrative medicine as a way to exploit digital technologies to improve patient-physician communication and to reach better health results.

Il Sole per Amico ("The Sun as a Friend") and Meglio Smettere ("Stop smoking is better")
Both are important awareness campaigns, supported by MSD, in collaboration with scientific society and patient associations to promote primary prevention. The first, promoted by The Italian Melanoma Intergroup under the patronage of the Ministries of Health and Education, is on melanoma's primary prevention and involves 130 schools throughout Italy, a major event at the parliamentary level, a national press conference, and seven regional press conferences resulting in impressive media coverage (>130 million contacts).

The second, in partnership with the Italian Association of Medical Oncology (AIOM) under the aegis of the Ministries of Health, is aimed at making the younger population aware of the risks to health posed by cigarettes. The campaign, featuring a famous testimonial by the 2015 U.S. Open winner Flavia Pennetta, will be launched at an institutional event, and includes a social media plan to better address the target population.

Ora Che Mi Ci Fai Pensare ("Now That You've Got Me Thinking")
"Ora Che Mi Ci Fai Pensare" focuses on the impact of therapy on patients suffering from inflammatory bowel disease (IBD) and on their quality of life. It was launched in February 2015 and developed by Italian and European patients' associations, the Italian Scientific Society for Gastroenterology (IG-IBD) and MSD Italy. It consists of a short movie made up of patients' self-shot videos. There have been over 10,000 views on YouTube/Vimeo and Facebook (Amici Onlus and IG-IBD Facebook accounts) and more than 500 "likes". The short movie "Now That You've Got Me Thinking" will be presented in several short-movie festivals throughout Italy in 2016.

"LOVE IT"
Education through information was the objective of "LOVE IT," a 360-degree cross-media campaign with the Italian Society of Gynecology and Obstetrics (SIGO), leveraging Italian "The Pill Without a Pill" campaign actions and aimed at creating a cultural movement on contraception.

PORTUGAL

Women's Choice

The latest Portuguese report on pregnancy interruptions showed that 97 percent of abortions occur as a result of women's choice and are not due to medical-related issues. Having no contraception or the wrong contraception is a circumstance

that largely contributes to these statistics. Oral contraceptives are used by 58 percent of women, but 60 percent of them admit forgetting to take it at least once in the last three months, showing that a daily contraceptive is not suitable for all women. The report also revealed that the Internet is the third source where women seek information about contraception, after primary-care physicians and gynecologists.

This was the first website exclusively for contraception in Portugal, created to reflect MSD´s vision of women´s health: contraceptive choices adapted to each woman's lifestyle. It is part of a digital patient education program of the Contraception Medical Society and Family Planning Association. The website is for women to learn about the pros and cons of contraceptive methods, and includes quizzes, videos and interactive tools. In 2015 alone it generated 10 million visits.

Prevent and Optimize Diabetes Treatment

Knowledge is a powerful tool to prevent and optimize diabetes treatment. But knowledge is relevant not only for people living with diabetes, their families and their informal caregivers, but also for people with little or no current link to diabetes. This site was developed to inform people about how to prevent and manage the disease. It serves as a tool for empowerment, which is a critical component of diabetes management.

SWITZERLAND

Action Guide on Health Literacy

In 2015, the Swiss Health Literacy Alliance developed an "Action Guide" (in both German and French) to support health care stakeholders in putting health literacy into practice. The "Action Guide" presents key facts and figures about health literacy in a reader-friendly way, describes some best-practice projects, and closes with a list of success factors for implementing such initiatives. In addition, the Alliance, of which MSD Switzerland is a founding member, published a report on the status of and perspectives on health literacy in Switzerland in collaboration with the Swiss Academy of Medical Sciences (SAMW). Both publications were presented at a Health Literacy Symposium in December 2015 organized by the Alliance and the SAMW.

KOMEKON

KOMEKON provides comprehensive health-related services to physician networks. The program consists of compelling health literacy courses and events for diabetes patients, combining an integrated treatment approach with interactive patient care. The program was jointly developed by PizolCare, a local physician network, and MSD Switzerland. Networks across Switzerland are now following the example of PizolCare, with MSD Switzerland facilitating implementation of the project. KOMEKON has gained the support of one of the health insurance systems, and others will hopefully follow suit.

[1] European Health Forum Gastein: EHFG 2013: New Consensus Paper calls for EU action on health literacy; Bad Hofgastein 2013; http://www.ehfg.org/health-literacy.html. Accessed: March 16, 2015.
[2] http://rigahealthconference2015.eu/wp-content/uploads/2015/08/Riga-Roadmap-download-FINAL.pdf. Accessed: May 13, 2016.
[3] http://data.consilium.europa.eu/doc/document/ST-14393-2015-INIT/en/pdf. Accessed: May 13, 2016.

HEALTH LITERACY

THE MANUALS

The Manuals, known as the Merck Manuals in the U.S. and Canada and the MSD Manuals in the rest of the world, are one of the most widely used medical information resources.

We believe that health information is a universal right and that every person is entitled to accurate, accessible and usable medical information. And we believe that we have a responsibility to protect, preserve and share the best current medical information to enable more informed decisions, to enhance relationships between patients and professionals, and to improve health care outcomes around the world.

As a sign of our deepened commitment to worldwide medical information access, we are making the Manuals available for free in digital form in multiple languages to professionals and patients around the world.

First published in 1899 as a small reference book for physicians and pharmacists, the Manuals have grown in size and scope to become one of the world's most widely used comprehensive medical resources. Over the years, the Manuals have been translated into 17 languages, and a consumer version has been published since 1997.

As the Manuals have evolved, they have continually expanded the reach and depth of offerings to reflect the mission of providing the best medical knowledge of the day to a wide cross-section of users, including medical professionals and students, veterinarians and veterinary students, and consumers.

GLOBAL MEDICAL KNOWLEDGE 2020

In 2015, we embarked on our most aggressive and far-reaching medical knowledge initiative to date, “Global Medical Knowledge 2020.” Through this worldwide project, we aim to make the best current medical information accessible for more than 3 billion professionals and patients around the world by 2020. As part of this project, all manuals will be made available for free online and through mobile apps in multiple languages.

We are currently on track to reach our 2020 goal, and by the end of 2016 we will launch this trusted medical educational material in all 10 targeted languages. Online access to the Manuals will serve as a valuable tool for patients and caregivers when faced with the need to make health care decisions for themselves and their loved ones.

Through “Global Medical Knowledge 2020,” we strive to enable more-informed decisions, enhance relationships between patients and professionals, and improve health care outcomes around the world. The initiative is a direct reflection of our company’s broad corporate commitment to addressing unmet medical needs and improving global health.

Global Medical Knowledge 2020 BY THE NUMBERS

Here’s how we’re working to fulfill our mission:

350 medical experts

continually update Merck Manuals’ content to reflect the most current and accurate medical information.

10,000+ resources

enhance our expansive database of medical topics with videos, images, animations, medical calculators and a growing set of other resources.

10 languages

will have their own version of the Merck Manuals for enhanced access and ease of use.

150,000+ relationships

with professionals and patients around the world on social media and other platforms facilitate meaningful dialogues on important medical topics.

1 connection point

enables consumers and professionals to access medical information tailored to their needs and knowledge — putting patients and their health care team on the same page.

0 ads or registration

improves the user experience of this not-for-profit initiative, as a sign of our commitment to providing free and open access to medical information.

HEALTH LITERACY

RESOURCES FOR HEALTH CARE PROFESSIONALS

Univadis® is a comprehensive online medical-information resource from Aptus Health—a subsidiary of Healthcare Services and Solutions (HSS)—for health care professionals worldwide.

This web- and mobile-optimized resource provides high-quality, relevant and trusted medical information essential for health care practice. The site features breaking medical news, accredited education courses and tools tailored by medical specialty and clinician need. Additionally, a point-of-care mobile application (Consult) is available in key markets. Over 3.5 million health care professionals are registered members of Univadis, which is available across 63 specialties, 20 languages and 90 geographic markets.

The medical and scientific content comes from independent third parties, such as scientific leaders, educational institutions and medical societies, as well as through partnerships with a range of world-leading medical publishers. Sponsor organizations provide educational funding to expand and augment the site's core content in adherence with the strict editorial principles of independence, relevance and quality.

Univadis is available across 63 specialties, in 20 languages and in 90 geographic markets

With no subscription or registration fees, Univadis provides access to:

- The latest medical news and clinical developments in 60+ specialist areas
- Selected full-text articles from *The Lancet* and *JAMA*
- Weekly research summaries from major peer-reviewed publications
- Conference coverage from medical congresses
- Full online access to trusted medical references
- A library of thousands of medical images to enrich presentations and research
- A wide range of resources to enhance interactions with patients at the point of care, including interactive 3-D anatomy tools and patient handouts

Univadis creates unique opportunities for long-term and meaningful partnerships with scientific and health care

organizations in addition to the world-class publishers that our company already works with. Univadis aims to be a valuable partner to build lasting relationships with our 2.9 million individual health care users globally.

ANTIMICROBIAL STEWARDSHIP

Antimicrobial Stewardship (AMS) is a rational, systematic approach to the use of antimicrobials in order to optimize patient outcomes and population health, and minimize unintended consequences, such as selection of pathogenic organisms (e.g., *Clostridium difficile*), toxicity and resistance. Our AMS vision is to be known as a leader within the industry and a sought-after partner within the broader health care community in advancing patient-centered AMS through education, implementation, research and advocacy initiatives with an emphasis on patient outcomes and value of care. We made significant progress toward this goal in 2015.

Education is foundational to AMS, and our company has helped support a variety of educational offerings for health care providers through international, national, regional and state organizations, including those with an infectious diseases-based membership as well as other subspecialty and generalist organizations (e.g., Society for Hospital Medicine). Outside the United States, we provide preceptorships for health care providers to learn firsthand from other providers practicing AMS in Colombia, Mexico and Brazil.

Implementation is required for AMS action and impact. Our company has an ongoing collaboration with an AMS Center of Excellence in Cali, Colombia that has trained over 200 physicians across Latin America and implemented over 70 local hospital protocols. We also participated in the expert panel to develop the National Quality Forum "Antibiotic Stewardship in Acute Care: A Practical Playbook," which provides practical guidance on options for hospitals and acute care facilities to implement these actions, using their existing resource availability.

Research is needed to build and disseminate evidence regarding AMS best practices and impact on patients and population health. 2015 marked the end of year one in a two-year collaborative project with the CDC/CDC Foundation to develop standardized metrics and an outcomes assessment tool for AMS programs related to patient safety and quality of care. Our company also supports an investigator-initiated research grant program specific to AMS and has funded 12 studies, between 2013 and 2015.

Advocacy for continued antimicrobial innovation, appropriate antimicrobial stewardship and sustainable access is vital to the fight against antimicrobial resistance. We are active in a number of policy and legislative discussions and initiatives, and have several representatives on the European Innovative Medicines Initiative (IMI) Driving Reinvestment in Research and Development for Antibiotics and Advocating their Responsible Use (DRIVE-AB) work packages.

DRIVE-AB is tasked with defining responsible use of antibiotics, identifying the antibiotic-related population health priorities, calculating the societal value of having new antibiotics available for these priorities and developing economic models to promote the desired antibiotic innovation and sustainable use of the resulting, novel antibiotics.

HEALTH LITERACY

HEALTH RESOURCES FOR PATIENTS

According to a study published by the *New England Journal of Medicine*, an estimated one-third to one-half of all patients in the U.S. reportedly do not take their medications as prescribed.

In 2012, after reviewing recent research, the Congressional Budget Office (CBO) estimated that a one percent increase in the number of prescriptions filled by beneficiaries would cause Medicare's spending on medical services to fall by roughly one-fifth of one percent.

"We remain committed to identifying the reasons why patients do not always correctly take prescribed medicine, and we support the development of improved evidence-based interventions that can lead to improved adherence."

The following resources are designed to help patients stay on course with their treatments and to have better conversations with their health care providers about the medicines they have been prescribed.

Our company's consumer-engagement program, a free health-support program available only in the United States, offers resources that help U.S. consumers achieve their health goals by reinforcing healthy lifestyle choices, providing disease-specific education, supporting adherence to therapy and facilitating more productive interactions with health care professionals. The site also provides support and encouragement for caregivers, who are often engaged in the day-to-day care and treatment decisions of family members and friends.

The program also provides health care professionals with health-support materials and tools for their patients. It is designed to support the relationship between health care professionals and health care consumers by providing tools and tips—online and through mobile devices—for healthier living between office visits.

- My Diary (a weight, medicine and blood sugar tracker)
- My Activity Tracker (tracks sleep and activity by syncing with certain activity-wearable devices)
- Caregiver Workbook
- Disease-specific articles and support information
- BMI Calculator and "Getting Started" fitness ideas
- Over 500 recipes and healthy eating tips
- Social Media Community: Connecting with consumers and caregivers on Facebook, Twitter, YouTube and Pinterest

THE ADHERENCE ESTIMATOR®

Patients often fail to reach clinical goals because they do not take medications as directed. We remain committed to identifying the reasons why patients do not always correctly take prescribed medicine, and we support the development of improved evidence-based interventions that can lead to improved adherence. We have a rich pipeline of adherence outcomes research projects, and we intend to broadly share our project findings with the health care marketplace, so that we can collectively address the issue of medication nonadherence.

The **Adherence Estimator®** is a validated, patient-based resource that gauges the likelihood of a patient adhering to a newly prescribed oral medication for certain chronic conditions. The Adherence Estimator asks questions about three key areas that affect adherence: patients' perceived concerns about prescription medication; their perception of the need for or their commitment to a prescription medication; and their perceived financial burden from the cost of a prescription medication.

After respondents answer the questions, the resource provides information to enable the patient and health care provider to discuss any concerns that the patient may have. We also developed ConversationStarters, an interactive video experience based on the Adherence Estimator that helps patients share their beliefs about their medication with their health care providers.

SPARTA

SPARTA is a proven adherence platform that supports patients on any of our company's therapies, to improve adherence to these medications while also providing access to various tools and resources to assist in the management of conditions.

SPARTA was created in Australia in 2009, in partnership with physicians and pharmacists who voiced the need for more robust patient support. In addressing this unmet need, modules were created to support enrolled patients with managing their chronic conditions. The modules consisted of various patient touch points (e.g., telephone support, disease education and text/email reminders) to help patients understand their condition better, realize the importance of diet and exercise in managing their condition and ultimately improve medication adherence. SPARTA grew from 60,000 patients in Asia-Pacific in 2013 to more than 160,000 patients across the globe in 2016.

Based on a recent analysis of 40,000 patients across 7 countries, 85 percent of patients taking part in the SPARTA program took their medications for more than 10 months and took it correctly 95 percent of the time.

In a subset of 2,000 patients, 70 percent of participants increased or started an exercise routine and 80 percent made positive changes to their diets.

SPARTA has been launched in Australia, India, the Philippines, Indonesia, Vietnam, Brunei, China, Malaysia, Singapore, Oman, Hong Kong, Mexico and Chile. Additional 2016 launches are planned in Colombia, Saudi Arabia, UAE, Ireland and Sweden, with several other regions, including Europe and Canada, planning launches in 2017.

SPARSH

MSD SPARSH Healthline is a telephone based, diabetes management support program for patients treated for Type 2 Diabetes Mellitus ("T2DM") with JANUVIA® (sitagliptin)/JANUMET® (sitagliptin and metformin HCl)/Janumet XR CP® (sitagliptin and metformin HCI extended-release).

SPARSH aims to improve therapy adherence among T2DM patients and improve their diabetes control by helping them

imbibe therapeutic life style changes. The key elements of SPARSH support include customized counseling on disease and lifestyle management along with text and adherence support.

In 2015, SPARSH enrolled approximately 17,500 patients and the average duration of patient stay improved by 36 days to about 11 months. Though the support provided to patients and physicians to help manage diabetes better has evolved significantly over the last seven years, a challenge we are working toward overcoming is the ability to understand and identify different patient profiles and expectations on how these patients wish to receive disease management support. These insights should help take us closer to providing patients with a much more customized experience, thus further improving therapy adherence and disease outcomes.

ACCESS TO HEALTH

COMMUNITY INVESTMENT

MAIN

We recognize that we cannot address complex public health challenges on our own, but must address the barriers to access where we believe we can make the strongest contributions.

OUR COMMITMENTS

We recognize that strengthening health systems and building health workforce capacity are important to improve access to quality health care and to help address underlying barriers to health. Through innovative approaches and partnerships, we will invest our expertise, human resources, financial resources, products and market-based solutions to:

- Support capacity-building, including health care professional training, to deliver health care solutions
- Address underlying barriers to health, such as health-system strengthening
- Pursue programs to provide direct access to our medicines and vaccines when market-based solutions are inadequate or unavailable

Despite efforts to develop and implement effective business and philanthropic strategies to help remove barriers to access, challenges remain to the complex and multifaceted nature of the problem. To address these challenges, the international community must pool its resources and expertise to strengthen health care systems, ensure adequate financing for health, and help build local health care capacity. Even in developed countries, challenges remain to reach groups of underserved populations.

Examples of our community investment follow:

MSD for Mothers is a 10-year, $500 million initiative focused on improving the health and well-being of mothers during pregnancy and childbirth. Learn more.

The **MSD Fellowship for Global Health** is a three-month, field-based corporate pro bono program that is designed to leverage the skills and talents of our employees worldwide. Learn more.

In 2015, we initiated a three-year partnership with the Australian NGO One Disease to fight scabies among indigenous populations. Funding from our company and another donor is supporting the work of two skin-health nurses to identify and manage the severe form of scabies in East and West Arnhem Land. The nurses will assist in training local clinics and educating both clinics and households with recurrent scabies problems. The lessons learned will be used to develop best-

practice guidelines for scabies management across the country. Learn more.

In March of 2016, our company and the MECTIZAN® (ivermectin) Donation Program donated $1 million to the END Fund in support of efforts in Africa to eliminate river blindness (onchocerciasis). The donation will enable participating countries to enhance their in-country technical expertise necessary to prepare for a period of post-treatment surveillance that is needed before an application can be submitted to the World Health Organization (WHO) for official elimination verification status. While three countries in Latin America have already received WHO verification of elimination of river blindness, no countries in Africa have yet achieved this goal. Learn more.

For additional examples of our support for health care capacity-building and health-system strengthening activities, please visit the Key Initiatives, Giving—Health, Women's Health and Vaccines pages.

We also recognize that adequate solutions are not always available when patients need them. And while we do not believe that donating medicines alone is a sustainable, long-term solution to the global challenge of access to medicines, we recognize that millions of patients need medicines now. For that reason, we remain committed to donating our medicines and vaccines through organized programs, as appropriate.

The primary programs involving donations of our products are: our Medical Outreach Program, the MECTIZAN Donation Program, and our U.S.-based Patient Assistance Programs.

PERFORMANCE

Community Investment	2011	2012	2013	2014	2015
Health care workers trained through our major programs and partnerships[1]	52,000	38,000	22,000	137,000	18,669
Investment in partnerships for activities that address underlying barriers to health, such as health-system strengthening and capacity-building (in millions)[1]	$35	$24	$24	$32	$31
People reached through our major programs and partnerships (in millions)	273	269	302	267	188

[1]Includes investments by the Office of Corporate Responsibility, MSD for Mothers and our company's Foundation.

In 2015, the reported number of health care workers trained and people reached through our major programs and partnerships decreased. This is in part due to the planned conclusion of our investments in several programs, including the African Comprehensive HIV/AIDS Partnerships (ACHAP), the African Program for Onchocerciasis Control (APOC), the GARDASIL® Access Program and the Earth Institute's Millennium Villages Community Health Worker Training Program.

We anticipate developing several new programs or partnerships within our community investment portfolio, and will report on these initiatives in future reports and ongoing communications.

ACCESS TO HEALTH

INFECTIOUS DISEASES

For more than 80 years, our company has contributed to the discovery and development of novel medicines and vaccines to combat infectious diseases.

In addition to a combined portfolio of vaccines, antibiotic and antifungal medicines, and medicines for HIV and HCV, we have multiple programs that span discovery through late-stage development.

Every year, there are more than 6 million deaths worldwide caused by infectious and/or parasitic diseases. Our company has a long history of both in-house research and engagement with external partners to address infectious diseases, and we continue to seek new ways in which we can contribute expertise and resources to these disease areas.

> “We’re not done yet. We need to maintain our commitment and our interest and continue to bring our full capability set to trying to do more to help solve the problem of infectious disease.”
>
> Dr. Julie Gerberding, M.D., Ph.D.,
> Executive Vice President
> Global Public Policy, Strategic Communications & Population Health

We apply our research and development resources, expertise and technology to identifying potential products that would address unmet needs in the treatment of infectious diseases, such as HIV, hepatitis C virus (HCV) and drug-resistant bacteria. We are also involved in a number of product-development partnerships and research collaborations to further develop treatments to address those diseases, as well as neglected tropical diseases (NTDs) and tuberculosis (TB).

We recognize that new methods and a broader scope of collaborating—with both public and private entities—are critical to

continuing innovation. This is true for all diseases, and especially true for diseases prevalent in low- and middle-income countries, for which the relevant expertise spans academia, local public health authorities, industry, and international agencies. We plan to continue to expand our interactions with these groups to provide relevant expertise and resources.

We also recognize that our research capabilities and our access strategies play an important role in recruiting outstanding scientists as well as potential external research collaborators seeking to make the products developed from their discoveries available to patients worldwide.

Learn more:

- Antimicrobials/Antibiotics
- Hepatitis C
- HIV
- Neglected Tropical Diseases
- Tuberculosis

INFECTIOUS DISEASES

ANTIMICROBIALS/ ANTIBIOTICS

Antibiotics have revolutionized medicine and saved millions of lives. Our company has played a major role in antibiotic development extending back to 1938, when the company introduced sulfamerazine, one of the world's first antibiotics. To this day, we remain one of only a few large pharmaceutical companies involved in the R&D of new antibiotics.

Bacteria resistant to multiple antibiotic medicines are becoming more common—jeopardizing our ability to treat what are historically considered minor infections and increasing the risks associated with secondary infections that can be commonplace with procedures such as surgery, chemotherapy and transplantation. The health and economic consequences of antibiotic resistance are considerable and costly, making it a serious threat to population health that demands a concerted, global response.

Each year in the United States, at least 2 million people become infected with bacteria that are resistant to antibiotics, and at least 23,000 people die each year as a direct result of these infections. In the European Union, drug-resistant bacteria are estimated to cause 25,000 deaths and cost more than $1.5 billion every year in health care expenses and productivity losses.

Annually in the U.S. at least 2M people become infected with antibiotic-resistant bacteria, and at least 23,000 people die each year as a direct result of these infections.

While the pace of resistance may be slowed through programs that promote the responsible and appropriate use of antibiotics, research must continue into new antibiotics and additional therapeutic and vaccine strategies that address this critical unmet need.

Our company supports policies that promote development of new antibiotics, access to approved medicines, and implementation of strategies to sustain antibiotic efficacy for future generations. The response to antimicrobial resistance (AMR) requires a comprehensive, global approach and meaningful collaboration between stakeholders, including governments, industry, health care providers, and patients.

Our company's long-standing commitment to the global fight against infectious disease goes hand-in-hand with a commitment to help slow the rate of emergence of potentially deadly resistant organisms.

OUR COMMITMENT TO ANTIBIOTIC RESEARCH AND DEVELOPMENT

As a leader in the fight against infectious diseases, we are committed to:

- Maintaining active R&D programs to address unmet medical needs in the prevention and treatment of infectious diseases
- Monitoring antibacterial resistance and emergence in collaboration with external partners, as exemplified by our long-standing commitment to surveillance studies
- Supporting responsible use of antimicrobials to help slow development of resistance and preserve current therapeutic options
- Advocating for improvements in regulatory guidance and financial incentives to support and accelerate innovation in the development of new antimicrobials, vaccines, services and solutions

An added challenge in the ongoing battle against resistant infections is the fact that, while resistance is increasing, the number of new antimicrobial medicines being developed has decreased over the past several years. Discovering novel medicines to combat resistant bacteria requires more effort, and the perceived commercial value of such medicines is low when compared with other disease treatments.

Continued innovation in developing new medicines is critical to addressing the growing resistance to current therapies. We are committed to working with partners to help address this growing area of unmet need and improve patient outcomes. Antimicrobial research remains a key priority for the company. We are one of only a handful of pharmaceutical companies that continue to have active antibacterial discovery and development programs.

We continue to invest internally and externally through collaborations in multiple development programs spanning discovery through late-stage development. Our current portfolio includes products with expected activity against several pathogens identified by the CDC as urgent threats. In total, we currently have more than 15 ongoing clinical trials evaluating antibiotic, antifungal and antiviral agents for the prevention and treatment of infectious disease. These trials are projected to enroll approximately 8,000 patients.

Our company's commitment to expanding its antibiotic capabilities was further reinforced in January 2015, when we finalized the acquisition of Cubist. Cubist's portfolio complements our own broad portfolio of antibiotics, antifungals and anesthetics. The combination of the two companies will advance a pipeline of candidates that hold the potential for making a meaningful difference in the lives of patients around the world.

In April 2015, during the 25th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), our company reaffirmed its long-standing commitment to discovering and developing novel medicines in the global fight against infectious diseases, including infections caused by resistant bacteria and other pathogens. Learn more.

COLLABORATING TO DISCOVER NEW ANTI-INFECTIVE AGENTS

Continued innovation in developing new anti-infective medicines is critical to addressing growing unmet medical needs and mitigating the growing problem of antibiotic and antifungal resistance. In addition to in-house anti-infective research efforts, our company augments its expertise and resources by collaborating with scientists around the world. The company is committed to working with partners to help address this unmet need and recognizes that new methods and a broader scope of partnering—with both public and private entities—are essential to harnessing innovation.

Since 2002, we have sponsored the Study for Monitoring Antimicrobial Resistance Trends (SMART). The SMART program is one of the world's largest programs for tracking trends in antimicrobial resistance. The information collected and shared is designed to help local and global health agencies improve surveillance so they can better understand trends in antimicrobial resistance and select appropriate antibiotics for their patients.

Other collaborations include:

Medina Discovery, Spain—Collaboration in the areas of microbiology and natural product chemistry, with a focus on screening and validation of drug targets for infectious disease

Orchid Pharma, India—A collaborative research agreement focused on the discovery, development and commercialization of novel agents for the treatment of bacterial and fungal infections

Center of Excellence for Translational Medicine, U.S.—A program funded by a National Institutes of Health grant to Rutgers University supporting multiple academic and industry groups in collaboration to advance the discovery of novel antimicrobial agents

In addition, we actively collaborate with leading scientists in antimicrobial research to investigate and validate novel therapeutic targets, evaluate new pathways for drug targeting, and develop novel tools and technologies to aid research. We have a number of ongoing collaborations with scientists at universities including Harvard, Princeton and Yale. Learn More.

FACILITATING ANTIMICROBIAL RESEARCH

By providing the broad scientific community with access to research tools and information, we recognize that we can fuel basic research and potentially expedite scientific progress toward the development of new anti-infective agents. In the last five years, our researchers have published more than 30 peer-reviewed research articles. Our company also provides access for researchers to publish small-molecule chemical probes and genetic tools, as well as recent clinical isolates and genetically engineered libraries of disease-relevant bacterial and fungal strains developed in our laboratories.

INFECTIOUS DISEASES

HEPATITIS C

MAIN

For nearly three decades, our company has been at the forefront of the response to the hepatitis C virus (HCV) epidemic. We are dedicated to applying our scientific expertise, resources and global reach to deliver health care solutions that support people living with HCV worldwide.

The World Health Organization (WHO) estimates that 3 percent of the world's population may be infected with HCV and that as many as 170 million people may be chronically infected and at risk of developing liver cirrhosis and/or liver cancer. One of the challenges of managing hepatitis C is that people with HCV often have no symptoms—and can live with an infection for decades without feeling sick.

Our scientists have been engaged in research to address HCV infection since the discovery of the virus in the late 1980s.

- Company researchers developed the first approved therapy for chronic HCV, interferon ?2b, in 1991
- In 1998, the first combination therapy developed by our scientists for chronic HCV, interferon ?-2b+ribavirin, was approved. We also launched boceprevir, one of the first direct-acting antiviral medicines against HCV, in 2011.
- In January 2016, ZEPATIER™ (elbasvir and grazoprevir)—a once-daily, fixed-dose combination tablet for the treatment of adult patients with chronic HCV—received regulatory approval from the U.S. Food and Drug Administration (FDA) and Health Canada for specified HCV genotypes. ZEPATIER has also been approved in the European Union, Switzerland, Israel and Saudi Arabia. Regulatory applications are under review in numerous other markets, including Japan.
- The clinical development program for ZEPATIER enrolled diverse groups of patients with chronic HCV infection, including patients who had failed certain prior therapies, and patients with significant co-morbidities and health complications such as severe renal impairment, compensated cirrhosis, and HIV co-infection, as well as those on opioid agonist therapy

Ongoing clinical research efforts are underway to develop new oral therapies to bring continued innovation to viral hepatitis treatment; including studies on regimens targeting additional HCV genotypes.

"We decided to have studies that would

encompass the breadth and depth of HCV, with many different types of HCV patients, including HIV-co-infected patients, patients with chronic kidney disease (CKD), and HCV-infected people who inject drugs and are receiving opiate agonist therapy (OAT). These people have traditionally been excluded from clinical trials. When we designed our Phase III Zepatier trials, we wanted to bring new treatment options not only to the 'big middle,' but also to underserved patients."

Dr. Eliav Barr

Vice President, Infectious Disease, MRL

ACCESS TO MEDICINES IN EMERGING MARKETS

In many developing countries, the spread of HCV is facilitated by unsafe medical practices, such as the reuse of needles and syringes by medical practitioners. The use and misuse of intravenous drugs is also a major route for HCV transmission.[1] Health systems in many of the countries most impacted by HCV are poorly equipped to widely diagnose HCV and to deliver care and treatment for those with the virus.[2]

Together, these factors are contributing to the heightened HCV disease burden in these regions. We are committed to developing sustainable solutions to improve awareness, diagnosis, and access to care and treatment in areas where the HCV disease burden is greatest.

Elevate awareness of HCV through:

- Educational programming for patients and providers to better identify and address unmet needs
- Academic research initiatives addressing the burden of HCV in areas most impacted by the disease

Enhance access to our medicines through:

- Developing an Access pricing program for our pegylated interferon ?2b medicine for low-income countries to help facilitate the initiation of treatment programs
- Differential pricing frameworks based on disease burden and country income in middle-income countries

Engage in local partnerships through:

- Collaborations with governments to initiate awareness and screening programs
- Support for international programming through civil society groups, including regional HCV research initiatives

Our company recognizes that global elimination of HCV will require the combined efforts of all stakeholders—governments, donor organizations, policy makers, advocacy groups, nongovernmental organizations (NGOs) and the private sector—to build a framework for promoting awareness, prevention and treatment of viral hepatitis, especially among the populations most at risk for chronic HCV. We remain committed to strengthening new and existing partnerships to achieve greater access to health care.

Several of the collaborations that we have undertaken are highlighted in the tabs above.

[1] European Association for the Study of the Liver. "Therapy of Hepatitis C: Clinical Application and Drug Development." http://www.who.int/mediacentre/factsheets/fs164/en/.
[2] Ewen Callaway. “Hepatitis C drugs not reaching poor.” *Nature* 508:295-296. 17 April 2014.

UNITED STATES

PRICING DESIGNED TO ENABLE BROAD PATIENT ACCESS

Innovations in chronic-HCV treatment that have become available over the past three years, now including ZEPATIER, provide the U.S. with an unprecedented opportunity to significantly reduce the burden of HCV. The scientific community believes that control of HCV infection may be possible, and is actively working to achieve that goal by 2030. A significant medical need remains: it is estimated that less than one in five patients with chronic HCV infection are currently treated, with thousands of new cases each year.

However, the majority of patients with chronic HCV have not yet been treated, in some cases because of to cost constraints. After considering these factors, our company established a list price in the United States and a comprehensive commercial- and public-segment access strategy that we anticipate will help broaden and accelerate patient access to treatment and move us closer to our shared goal of reducing the burden of chronic HCV in the U.S.

> “Our company’s decades-long commitment in chronic hepatitis C—and infectious diseases overall—has been to both scientific innovation and access. We are embracing this opportunity to partner with payers and physicians to enable as many appropriate patients to be treated as possible, as quickly as possible.”
>
> Robert McMahon
>
> President, U.S. Market, Global Human Health

FINANCIAL ASSISTANCE PROGRAMS

Our company also offers assistance through our Patient Assistance Program (PAP) to patients who cannot afford ZEPATIER. The PAP for ZEPATIER is designed primarily for the uninsured who, without our assistance, could not afford their medication. Additionally, for those patients whose insurance plan covers ZEPATIER, but who still cannot afford their medication, a request for an exception may be made if they meet certain financial, medical, and/or insurance criteria. Click here for more information about the PAP.

INDIA

In India, the highest prevalence of Hepatitis C is in the northwestern provinces of Haryana and Punjab, and the low-income, rural population is disproportionately affected.

Recognizing the high prevalence, high cost burden and challenges of treatment adherence of HCV, MSD in India initiated *Project Sambhav* ("making it possible"), a program aimed at educating patients and their families about HCV and help, manage the cost of treatment. Through *Project Sambhav*, MSD in India provides subsidies for financing treatment to eligible patients and counseling to help educate about treatment, adherence and transmission prevention.

HCV treatment in India is currently not provided by government health programs. To access treatment, patients must generally pay for treatment out of pocket. Unfortunately, with no public funding for hepatitis C treatment, these low-income patients have had very limited access to treatment.

In 2012, we began two efforts to increase access to treatment in Haryana and Punjab.

JEEVAN-REKHA

In 2012, we started engagement with the government of Haryana seeking to increase awareness of the public health burden of HCV and to co-create a comprehensive HCV disease management program.

In December 2013, Haryana announced *Jeevan-Rekha* (meaning "Lifeline"), India's first public program hepatitis C with free access to treatment for patients below the poverty line. The government of Haryana issued a tender for manufacturers that included provisions on "pay-for-performance" and deferment of payment as tender conditions, a first-of-its-kind tender in public procurement in India. These provisions ensured that the government paid only for patients who successfully completed treatment and allowed the government to extend payment. Our company was awarded this two-year performance-based contract in January 2014.

The *Jeevan-Rekha* comprehensive free-treatment program was initiated with the following elements:

- Free medication (ViraferonPeg® therapy) for eligible patients
- An independently run integrated disease management program consisting of:
    - On-therapy diagnostics to monitor prognosis of all enrolled patients
    - A treatment counselor to help patients complete their therapy
    - An online disease management application where patients' progress is monitored on a real-time basis for prognosis and adherence
- Performance evaluation as part of the pay-for-performance requirement, our company would provide free doses to the government for patients who had adhered to therapy but did not achieve SVR

Impact

More than 1,200 low-income patients who had previously not had access to treatment have been treated under this program since it began. Of these, 96 percent have achieved a sustained virologic response (SVR).

PROJECT SAMBHAV

In order to help facilitate access to treatment for patients paying out of pocket, in 2012, MSD in India launched Project Sambhav, a microfinance pilot program in the state of Punjab.

MSD partnered with a third-party disease management program coordinator, a leading local finance company, and local

health care clinics to develop and implement the program.

The program consisted of two components relating to financing and disease management:

- Enrolled patients were offered interest-free loans subsidized by MSD to access HCV treatment
- Physicians referred patients and their families to a trained health counselor to encourage adherence and improved disease management strategies

Patients diagnosed with HCV and identified as having an issue affording treatment were referred to a counselor who provided disease treatment and transmission-prevention information, and information on the loan option. Low-interest loans were offered to eligible patients to cover the cost of treatment. Patients got vouchers to be redeemed for MSD's ViraferonPeg® at authorized pharmacies. Patients repay the loan in small monthly installments over a period of two to three years and continue to receive counseling and drug administration support during the course of treatment.

MSD's subsidy of the loan includes covering the cost of waiving the repayment of loans for any patients who have experienced treatment failure.

Impact

After seeing success with this model in Punjab, MSD in India expanded the program to several states in India where hepatitis C prevalence is very high. More than 200 treatment centers have actively participated in this program and nearly 1,000 patients (nearly 40 percent of treated patients in these states) have received treatment through this financing program. Moreover, the loan repayment rates have been very high, enabling this program to sustain itself.

Sambhav has received external recognition as an innovative approach to increasing access to treatment.

VIETNAM

Our company's Foundation has awarded a multiyear grant to Population Services International (PSI), a leading global health organization, to conduct educational outreach targeting at-risk populations and health care providers.

Additionally, service providers from high-prevalence areas were trained to promote an understanding of HCV and facilitate referrals for diagnosis and prevention counseling.

In 2013, our company's Foundation awarded a three-year, $650,000 grant to Population Services International (PSI) to build awareness, motivation and capacity to help prevent HCV among the most at-risk groups in Vietnam:

- PSI conducted research throughout 2013 to identify factors facilitating HCV transmission in Vietnam. Results found that a low perceived risk of HCV, limited access to information and limited access to HCV prevention methods were major drivers of transmission among the most at-risk groups.
- In response to this research, PSI initiated activities to improve access to and create demand for information on HCV behaviors among the most at-risk individuals, including people who inject drugs (PWID), who are at risk of both HCV and HIV
- In addition, PSI worked with the ministry of health to develop a national HCV prevention training package to build capacity and commitment in order to integrate routine HCV prevention and referral for diagnosis and treatment into HIV service provision at sites offering other services, including voluntary counseling for HIV and methadone treatment
- HCV prevention communication materials including non-stigmatizing messages designed to motivate the practice of HCV prevention behaviors, including the use of sterile low-dead-space syringes, which reduce the risk of HCV, and increased knowledge of HCV status. Messages are conveyed via highly cost-efficient channels including outdoor billboards, leaflets and interactive events in locations accessible to people at greatest risk.
- PSI improves access to HCV prevention products and materials at outlets accessible to key at-risk groups, including tea stalls and truck stops as well as pharmacies and health service delivery points

Impact

PSI's programming has had a measurable impact on individuals at risk for HCV in Vietnam, As evidence by the following results achieved in January–September 2014:

- More than 15,000 years of healthy life have been saved as a result of more than 2 million low-dead-space syringes distributed
- More than 9,200 individuals at risk of HCV have been reached with messages to motivate HCV prevention behaviors
- The perceived risk of HCV increased by 86 percent among individuals reached by PSI's HCV communications
- 106 health care providers were trained using the HCV training package

Next Steps

PSI's programs supported by the Foundation grant are still progressing, with ambitious goals for future programming that include:

- Scale-up of activities initiated in 2013 for greater coverage and impact
- Increased national and provincial support for expanded HCV prevention programming, including face-to-face events and promotional materials
- Development of practical training tools to facilitate routine integration of HCV services into HIV care

UKRAINE

MSD supported the development of the National Treatment Program, a public awareness program that has greatly increased the level of discussion and awareness of HCV in Ukraine.

Over the past five years, we have collaborated with local governments, advocacy groups and scientific leaders to raise awareness and understanding of chronic HCV among both patients and health care providers. MSD continues to collaborate with these partners on ways to improve HCV treatment.

Beginning in 2009, MSD in Ukraine initiated a wide range of programming to increase discussion about HCV and engagement with civil society and government on HCV, including:

Expert Forums and Patient Roundtables: Through coordination with civil organizations such as Patients of Ukraine and Stop Hepatitis, MSD in Ukraine collaborated with HCV experts and patient organizations to elevate the conversation about HCV in Ukraine and best practices to fight the disease.

White Paper on Hepatitis: MSD in Ukraine, along with Stop Hepatitis, supported the development of an epidemiological and economic assessment of HCV in Ukraine, which helped inform discussions during patient/expert roundtables and helped communicate to the government of Ukraine the urgency of the HCV problem.

Treatment Access: In 2013, MSD in Ukraine, through engagement with civil society and the Ministry of Health, agreed to lower the price of treatment of HCV to facilitate pilot treatment programs for patients co-infected with HCV and HIV through the ministry of health and the AIDS Alliance, a Global Fund grant recipient. MSD also supported training of 30 doctors to properly administer care through the AIDS Alliance program.

Hepatoschools: In Ukraine, "hepatology" is not a formal medical specialty. In order to build capacity to treat HCV, MSD in Ukraine initiated a medical education program to train young gastroenterologists and infectious disease specialists on hepatitis C. More than 120 doctors were educated through three training stages to better equip them to recognize and treat HCV.

Impact

- MSD in Ukraine has worked to help facilitate the conversation about HCV through collaboration with patients,

government and advocates to improve the situation in Ukraine. Ukraine's first National Treatment Program (NTP) for HCV was developed and approved in 2013. For the first time, patients were registered to receive state funding for HCV medicines.

- To date, 44,000 patients have been diagnosed with HCV. From the moment the NTP was approved until today, about 4,500 patients have been covered with our HCV treatment.
- In 2012, we undertook a number of initiatives to improve patients' access to our treatment. We localized PEGINTRON® (peginterferon alfa-2b) and lowered the price by 100 percent for the state and Global Fund tenders for the next years.
- In 2015, to support co-infected patients with combination therapy using a new HCV treatment (Sovaldi), we donated 600 units of PEGINTRON to the AIDS Alliance.
- More than 120 doctors were trained throughout Ukraine to increase their knowledge of how to treat HCV, as well as developments and innovation in medicines for the virus. An additional 30 doctors were trained to combat HCV through the AIDS Alliance program.

THAILAND

MSD initiated several programs, including the Liver Evaluation and Disease Awareness (LEAD) program, to help address low diagnosis and awareness of HCV in Thailand.

As part of the LEAD program, health care providers are trained to be aware of and recognize at-risk populations to help ensure interventions prior to disease manifestations or complications.

Since 2012, MSD in Thailand has developed and rolled out three programs to address health care provider (HCP) HCV education, low HCV diagnosis rates, and HCV awareness and education among the general public:

Building Provincial Capacity to Treat HCV Program: MSD in Thailand partnered with the Thai Red Cross AIDS Research Center and HIV Netherlands, Australia, Thailand Research Collaboration (HIVNAT) to improve the quality of care for HCV patients by educating HCPs across health care sectors. Over a period of six months, HIV and HCV experts delivered seminars and workshops at five hospitals in different provinces in Thailand. In addition to building general education and awareness, the program sought to inform future educational programming by surveying trainees and participants about the effectiveness of the program.

An Integrated Program for Education and Management of Viral Hepatitis in the National Blood Center: MSD in Thailand awarded a $70,000 grant to the Department of Medicine of Chulalongkorn University (CU) to support the National Blood Bank in Thailand. With the collaboration of CU and the Thai Red Cross Society, we targeted HCPs working at the National Blood Bank to improve knowledge and awareness of viral hepatitis among the professional staff and blood donors. The goal of the program is to increase identification of infected people, who can then receive appropriate medical management and education on viral hepatitis. In addition, the program provided similar guidance and appropriate management of viral hepatitis for blood donors who are chronically infected with HBV or HCV.

Liver Evaluation and Disease Awareness (LEAD): The LEAD program was a two-pronged approach to improving hepatitis disease awareness and patient diagnosis of viral hepatitis through a collaboration of several local hospitals to conduct educational programs and hepatitis screening event, among lay people. MSD in Thailand also partnered with a laboratory-test company to implement a patient support program to facilitate diagnostic testing of patients who are chronically infected with HBV or HCV but who cannot afford diagnostic testing to monitor disease progression and the need for treatment.

Impact

The LEAD program is continuing in Thailand, and its results to date include:

- Nearly 1,100 HCPs, primarily physicians, nurses and pharmacists, were educated as a result of the collaboration with HIVNAT

- In the Integrated Program for Education and Management of Viral Hepatitis in the National Blood Center, 80,000 new blood donors and approximately 2,000 infected donors to the National Blood Bank were educated and provided with appropriate management of viral hepatitis.
- The LEAD program is continuing in Thailand, and its results to date include more than 15,000 people from all over the country having been screened and educated.

EGYPT

Recognizing the urgent need for action in Egypt, we collaborated with the ministry of health (MOH) and advocacy and industry partners to develop targeted programming to fight HCV.

The initiation of communications campaigns, screening programs and treatment subsidies across the country has helped increase awareness and understanding of chronic HCV in Egypt. In 2013, our company launched the first Middle East School of Hepatology (MESH), which provided numerous medical professionals from across the region with advanced medical education targeting hepatic disease in the Middle East.

Egypt has the greatest prevalence of HCV of any country globally, with 10–13 percent of the population infected.

Recognizing the high disease burden in Egypt, MSD has taken an active role in fighting the HCV epidemic in Egypt for many years, including a number of programs initiated since 2006:

Ministry of health (MOH) collaborations: MSD in Egypt has worked closely with the MOH to develop programming and lower pricing for its HCV medicines. Notably, MSD agreed to offer PEGINTRON, its pegylated-interferon medicine, to the Egyptian government at its lowest price globally, recognizing the high burden of disease in Egypt and the Egyptian government's commitment to expanding HCV treatment.

Egyptian Education, Access, Screening and Treatment (EEAST) program: The EEAST program was a multifaceted campaign to increase education for both patients and health care providers. Through collaborations with several hospitals, the campaign sought to educate HCPs about safe injection practices and proper screening procedures. At the same time, the campaign featured screening programs for patients in which they too were educated about prevention methods for HCV.

Virus C Free Children Initiative: MSD recognized the high rate of pediatric HCV patients, and collaborated with the Egyptian Society for Treatment of Liver Disease and the MOH to help remedy the epidemic. MSD supported the use of noninvasive screenings for pediatric patients at risk of HCV and supplied discounted treatment for these patients.

Middle East School of Hepatology (MESH): A significant cause of the spread of HCV in Egypt is poor knowledge of prevention methods among HCPs. MSD invested $640,000 and collaborated with the Misr El Kheir Foundation to launch the region's first Middle East School of Hepatology. The program focused on educating doctors on hepatology to increase quality of care for HCV and to stop the spread of unsafe practices. The program, while based in Egypt, sought to educate doctors from countries throughout the Middle East.

Impact

Through its wide scope of programming, MSD has engaged with the advocacy, industry and governmental community in Egypt to address the country's HCV epidemic. Results of some of this programming include:

- Discounted medicines for patients across 26 treatment centers in Egypt
- More than 350,000 patients treated in the national program since 2006 prior to the introduction of all-oral treatments in 2014
- Screening through the EEAST program in three major sites of HCV prevalence
- More than 100,000 individuals introduced into the National Database Project for HCV
- More than 850 children screened and treated through the Virus C Free Children Initiative
- 50 HCPs educated as hepatologists over two years across 16 countries in the Middle East, who graduated on

October 10, 2015

MAIN

For more than 30 years, our company has been committed to addressing the global challenge of the HIV epidemic.

With over 35 million people infected and 2 million new infections each year globally, the challenges of HIV are vast, impacting both developed and developing countries. These challenges include scientific, behavioral and programmatic aspects that continue to change as the epidemic evolves.

Since 1985, we've been engaged in research and development efforts in both HIV prevention and treatment of HIV. These efforts continue today. But research is just one part of our comprehensive strategy to address unmet needs in combatting HIV.

Our company has also sought to make a difference in the fight against HIV through efforts to enhance access to our HIV medicines, particularly in the developing world, and through partnerships that seek to strengthen health systems to better deliver prevention and treatment services. Clearly, the need is too great for any one stakeholder to address, requiring coordinated efforts among many.

A MULTIFACETED APPROACH TO IMPROVING ACCESS

We are committed to working with governments, donors, innovative and generic manufacturers, multilateral organizations, and civil society to address the full range of factors affecting access. After a decade of specific efforts to increase access to HIV treatment in the developing world, it is clear that access to care is about more than the price of medicines, and that collaboration has been essential to the progress made against HIV.

We have seen that increasing access requires a broad, comprehensive approach. Consequently, we are committed to improving patient access through expanded availability, enhanced access strategies and multi-sectoral partnerships.

To make these possible, we have employed multiple strategies to address the needs of particular regions and countries, including: seeking rapid and broad registration of our antiretroviral medicines (ARVs); providing support for clinical studies in resource-limited settings; implementing differential-pricing strategies; signing voluntary licenses with generic manufacturers; developing pediatric formulations; and establishing strong collaborations with governments, manufacturers and other stakeholders.

FOCUSING ON UNMET NEED IN PEDIATRIC TREATMENT

Most recently, we have worked to increase access to the pediatric formulations of raltegravir, our integrase inhibitor, in the areas of greatest need. We have developed several pediatric formulations of raltegravir, which, following clinical studies conducted in collaboration with the IMPAACT Network, have been approved by the U.S. Food and Drug Administration (FDA) for children as young as four weeks of age. Studies in infants below four weeks of age are ongoing.

Pediatric HIV treatment is an area where multi-sector efforts are needed to facilitate development of appropriate formulations and to promote manufacturing and supply of these pediatric formulations.

The burden of pediatric HIV falls primarily in sub-Saharan Africa and in lower-income countries. The lack of demand for pediatric HIV medicines in high-income countries provides little commercial incentive for the development of optimized pediatric combinations, such as those seen in adults. Given this, public-private partnerships are key mechanisms to facilitate availability of new pediatric formulations and to develop optimized formulations and combinations of pediatric ARVs.

Recognizing the particular challenges of addressing the needs of children with HIV, we recently entered into an agreement with the Medicines Patent Pool. The agreement is designed to improve access to raltegravir for pediatric populations in 92 low- and middle-income countries where 98 percent of the children infected by HIV live.

In February 2015, we announced an agreement with the Medicines Patent Pool (MPP) to license our pediatric formulations of raltegravir for use in treating HIV-1 infection in infants and children from 4 weeks to under 12 years of age in developing countries. This is the MPP's first agreement to provide access to an HIV integrase inhibitor for use in combination HIV therapy for infants and children in this age range.

The agreement also allows for development of novel pediatric formulations of raltegravir and novel combinations—in support of the "Global Pediatric Antiretroviral Commitment-to-Action" announced by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the Pediatric HIV Treatment Initiative (PHTI); and the Global Fund to Fight AIDS, Tuberculosis and Malaria to accelerate the development of new, high-priority pediatric ARV co-formulations.

ACCESS/AVAILABILITY

Multi-stakeholder efforts, including those of governments,

civil society, donors and the private sector, are needed to address the challenges of delivering comprehensive HIV prevention, care and treatment.

We constantly strive to discover new ways to apply our expertise, human and financial resources, and market-based solutions to address the complex challenge of patient access. Our strategies are designed to enable us to facilitate access while continuing to develop new medicines. They also help us move beyond the limits of what we can achieve if we work alone.

This desire to redraw the boundaries of possibility enabled us to pave the way for two successful private-public partnerships that were created in the last two decades in some of the countries hit hardest by HIV. Learn more.

ENHANCING ACCESS IN THE DEVELOPING WORLD

To facilitate access to raltegravir in sub-Saharan Africa and in low-income countries, the areas of greatest need and the least ability to finance health care, we instituted a multi-strategy model that includes developing a low-cost supply chain with manufacturing partners that has enabled us to reduce our Access price in sub-Saharan Africa, low-income countries and least developed countries (LDCs), and to grant nonexclusive voluntary licenses to multiple generic manufacturers to supply generic raltegravir in these regions.

Public-sector purchasers in the 62 countries that are considered the world's poorest and hardest hit by the HIV and AIDS pandemic are eligible for our lowest price. According to the WHO, three-fifths of patients in need of therapy live in these countries.

The countries included are all countries currently identified by the United Nations Conference on Trade and Development (UNCTAD) as LDCs, as measured by their low income, weak human assets and high economic vulnerability. We are also extending our Access price to public-sector purchasers in those 12 countries in sub-Saharan Africa hardest hit by the HIV and AIDS pandemic but not yet included on the UNCTAD list. A complete list is available here.

Given the varying levels of economic development and national strategies, in other middle-income countries we have implemented strategies to make meaningful improvements in patient access. We are focusing on working with governments and with other country stakeholders to develop strategies tailored to each country's HIV-access needs. As part of this effort, we have implemented a differential pricing policy based on country income level, disease burden, treatment-guideline position, patient access through national AIDS treatment programs, and market conditions. As conditions evolve, we continue to refine these country-specific models.

To truly enhance access to treatment in low- and middle-income countries, the international community must collaborate to strengthen health care infrastructure, to ensure adequate financing for health, and to help to build local health care capacity through training and support. Pharmaceutical companies alone cannot solve these immense public-health problems. Sustainable solutions will come from comprehensive approaches that draw on the expertise of all stakeholders.

ADDRESSING ACCESS ISSUES IN THE DEVELOPED WORLD

In developed countries, we continue to work to address patient access needs. In the United States, for example, many state AIDS Drug Assistance Programs (ADAPs) have struggled to meet growing need. Over the last two decades, our company has lowered or frozen the price of its ARVs five times. We also continue to offer support to eligible patients through our comprehensive Patient Assistance Programs and Co-Pay Assistance Program. Since 2010, we have worked with Welvista and with HarborPath to offer immediate access to no-cost HIV medicines to patients on ADAP waiting lists and to support a common portal for patients accessing our company-sponsored Patient Assistance Programs (PAPs).

STATE AIDS DRUG ASSISTANCE PROGRAM (ADAP)

We have a long history of working closely with leaders from the HIV community to ensure that our approach to pricing our medications is fair and reasonable, balancing our interest in conducting extensive HIV research with efforts to support broad access to our medicines.

We were one of the first companies to provide our HIV medicines to uninsured patients on waiting lists for drugs under the AIDS Drug Assistance Program (ADAP). In addition, we were the first company to provide a price freeze for state ADAPs in the late 1990s, when they began to suffer a funding challenge.

We expanded our price-freeze policy to subsequent products, and also continue to provide expanded financial relief to state ADAPs through increased discounts. Through the agreement, which was extended through December 31, 2016, we provide continued support for initiatives that provide low-income individuals living with HIV with access to medicines.

ADAPs reach approximately one-third of people with HIV estimated to be receiving care nationally. The renewal of the existing special pricing program through 2016 was our fourth major ADAP response in five years.

SUPPORT™ PROGRAM IN THE U.S.

Our commitment to patients' access to our products is reflected in our SUPPORT™ Program, which helps answer questions related to insurance coverage and provides free reimbursement support for patients who have been prescribed ISENTRESS®(raltegravir) or CRIXIVAN® (indinavir sulfate). A program specialist can also refer patients to the Patient Assistance Program, which provides ISENTRESS and CRIXIVAN free of charge to eligible patients. Our company's Patient Assistance Program was designed primarily to help those who do not have insurance coverage; however, individuals who have insurance, including Medicare Part D, but still have trouble paying for their medicines may request that an exception be made, provided that their income is not above a set limit. Learn more.

CO-PAY ASSISTANCE PROGRAM IN THE U.S.

In addition to the SUPPORT™ Program, we have a program in the United States for eligible patients on ISENTRESS. If patients have private insurance and an out-of-pocket cost for ISENTRESS, they may be eligible to receive a savings coupon. The coupon provides savings toward their out-of-pocket costs. Restrictions, terms and conditions apply. Learn more.

COMMON PATIENT ASSISTANCE PROGRAM APPLICATION

We also participate in the national Common Patient Assistance Program Application (CPAPA) for HIV medications. The form was developed by the Department of Health and Human Services (DHHS), participating pharmaceutical companies, the National Alliance of State and Territorial AIDS Directors (NASTAD), and community stakeholders. The form can be used both by people living with HIV and by their providers, and reduces the need to complete several different and individual PAP application forms for HIV medications.

PRICING/REGISTRATION

We continually look for ways to reduce the cost of our antiretrovirals (ARVs) for people living in the world's

poorest countries and those hit hardest by the epidemic.

One way is to work with external manufacturers and suppliers to achieve incremental efficiencies. For ISENTRESS® (raltegravir), we have established a low-cost supply chain with external partners for commercialization in all low-income countries and all countries in sub-Saharan Africa.

With the implementation of this supply chain, we have been able to reduce our price of ISENTRESS to $1.85 per day in these countries. We have also granted multiple nonexclusive licenses to several Indian generic manufacturers for the manufacture and commercialization of the 400mg tablet formulation of raltegravir in 60 low-income and sub-Saharan African countries. In addition, in February 2014, together with Cipla, we announced a strategic partnership to co-market raltegravir (400mg tablet) in the Indian market.

In February 2015, together with the Medicines Patent Pool (MPP), we announced a licensing agreement for pediatric formulations of raltegravir for children less than 12 years of age covering 92 low- and low-middle-income countries.

To date, we have also granted royalty-free licenses for efavirenz to six South African generic manufacturers.

HIV PRICING POLICIES

Our differential-pricing policy is part of our commitment to addressing HIV through a multi-pronged strategy, with the goal of ensuring that our HIV antiretroviral (ARV) medicines reach as many of those in need as possible.

ISENTRESS®, STOCRIN®, CRIXIVAN®
The lowest Access price for our HIV medicines is offered to countries with a combination of highest disease burden and lower country income (gross national income [GNI] per capita), as defined by the World Bank. A list of eligible Access countries is provided here.

As of July 1, 2015, the Access prices for our HIV medicines for eligible customers[1] are:

HIV Pricing

Drug Name	**Daily Dose**	**Pricing $ per unit**
		STOCRIN ®
50mg tablet	4 (200mg)	169 (0.12)
200mg tablet	3	394 (0.36)
600mg tablet	1	237 (0.65)
30mg/ml suspension (bottle)	9ml	310 (0.094)
30mg/ml suspension (bottle)	12ml	413 (0.094)
		CRIXIVAN® (indinavir)
400mg cap	4	394 (0.27)
		ISENTRESS® (raltegravir)
400mg tablet	2	675 (0.925)
100mg chewable tablet	based on weight	(0.60)
25mg chewable tablet	based on weight	(0.30)

Countries classified as lower-middle-income and upper-middle-income[2] by the World Bank are eligible for prices that are discounted from those in high-income countries. These prices are based on, among other things, a combination of country

income, disease burden, treatment guideline positioning, patient access through national AIDS treatment programs and market conditions, and will be negotiated with each government. For high-income countries, we will make ISENTRESS available at competitive prices that take into account the innovation and value that ISENTRESS represents.

ATRIPLA
We sell ATRIPLA® (efavirenz/emtricitabine/tenofovir disoproxil fumarate) at $1.68 per day, or $613 per year, in 98 Access countries, as defined by our agreement with Gilead.

[1] Customers eligible for public-sector Access pricing in eligible Access countries will include: governments and programs fully funded by governments and/or by multi- and bilateral donors (e.g., the Global Fund, PEPFAR, UNITAID); UN System organizations; NGOs and other noncommercial providers of HIV treatment in sub-Saharan Africa; World Bank–defined low-income countries, UN-defined least-developed countries and India. We offer these products on a Delivered Duty Unpaid (DDU), Carriage and Insurance Paid (CIP), or Carriage Paid To (CPT) airport-of-destination (Incoterm, 2000) basis. Additional costs may include freight, insurance, customs handling, taxes and duties.
[2] Customers eligible for public-sector pricing in lower-middle and upper-middle income countries will include: governments and programs fully funded by governments and/or by multi- and bilateral donors (e.g., the Global Fund, PEPFAR, UNITAID); UN System organizations; and NGOs. Low- and middle-income countries that are members of the European Union are not eligible for pricing under this Access program.

REGISTRATION

We are committed to pursuing rapid registration of our antiretrovirals (ARVs), including registration in those countries most affected by HIV/AIDS. Currently, our ARVs are registered or available through import waiver in many countries. Since the first approval in 2007, ISENTRESS® (raltegravir) has received regulatory approval in more than 100 countries.

Details of registration and availability of our four ARVs are available through the links below:

- ATRIPLA® (efavirenz, emtricitabine, tenofovir disoproxil fumarate)
- CRIXIVAN® (indinavir sulfate)
- ISENTRESS® (raltegravir)
- STOCRIN® (efavirenz)

PREQUALIFICATION

- ISENTRESS, STOCRIN, CRIXIVAN and ATRIPLA have received World Health Organization (WHO) prequalification. WHO prequalification verifies that medicines meet the quality, safety and efficacy requirements of UN agencies, including UNICEF and the Pan American Health Organization. All of our company's formulations of ISENTRESS, including the 400mg tablet, the 100mg and 25mg chewable tablets, and the granules for suspension, have been approved by the U.S. Food and Drug Administration (FDA) and the European Medical Agency, making these formulations eligible for purchase by both the U.S. PEPFAR program and the Global Fund to Fight AIDS, Tuberculosis, and Malaria.

PARTNERSHIPS

Improving access to care requires more than simply making our medicines available and affordable.

The most important factors for long-term sustainability are strengthening health care infrastructure, ensuring adequate financing for health, and helping to build local health care capacity through training and support. Public-private partnerships have a critical role to play in this process, drawing on the complementary expertise of all stakeholders—governments, international agencies, community organizations, donors, the private sector, nongovernmental organizations (NGOs), patients and others—to identify the most promising and efficient ways to address the impact of HIV in a variety of resource-limited settings.

Learn more about our partnerships to address the challenge of HIV.

RESEARCH

Our company has had an intensive, broad-based HIV clinical research program in place since 1985 that has sought to address both treatment and prevention.

In addition to our own research efforts, we have entered into collaborations with other researchers and scientific organizations to help accelerate the search for new treatments and possible cures. Our work has been pioneering, and was pivotal in the development of new antiretroviral (ARV) treatments including protease inhibitors (PIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs) and integrase inhibitors. We have also played an important role in collaboration with others to define the principles for combination ARV treatment that are the standard for today's treatment paradigm.

OUR HIV RESEARCH EFFORTS

- In the mid-1980s, soon after the public health community first coined the term "AIDS" to describe the emerging epidemic, our company began its HIV/AIDS research. Our scientists were the first to describe the chemical structure of the protease enzyme, and published the findings immediately to encourage further research efforts. They then developed CRIXIVAN® (indinavir sulfate), an HIV protease inhibitor, which was approved by the European Medicines Agency and the U.S. Food and Drug Administration (FDA) in 1996. At the time, the FDA's approval of CRIXIVAN was the fastest approval in FDA history.
- In 1997, our company's clinical study of CRIXIVAN was the first to show that a combination of antiretroviral medicines could provide prolonged suppression of HIV RNA. Today, CRIXIVAN in combination with antiretroviral agents is indicated for the treatment of HIV infection.
- In 1999, we introduced efavirenz, a non-nucleoside reverse-transcriptase inhibitor (NNRTI), which was developed with DuPont Pharmaceuticals. Our company retained the rights to market efavirenz in select markets outside the United States. Today, efavirenz is one of the most commonly prescribed antiretroviral therapies worldwide.
- In the early 1990s, our company was the first to demonstrate that inhibition of the HIV-1 integrase enzyme—which is required for HIV replication—was possible, and that inhibiting the integrase protein reduced replication and spread of the virus. This research advancement led to the development of ISENTRESS® (raltegravir). In 2007, the approval of ISENTRESS introduced a new class of treatments, HIV-1 integrase strand transfer inhibitors. Today, ISENTRESS is indicated in combination with other antiretroviral agents for the treatment of HIV-1 infection in patients four weeks of age and older. The use of other active agents with ISENTRESS is associated with a greater likelihood of treatment response.
- In addition, since the mid-1980s, shortly after the HIV virus was identified, our company pursued one of the largest HIV vaccine research programs, culminating in a large-scale trial that illustrated the difficulty of developing a successful HIV vaccine.

We continue to focus on comprehensive research and development that targets HIV, recognizing the need for new methods to address the epidemic. Our current R&D work in HIV includes programs to develop novel HIV-prevention technologies, new HIV antiretroviral medicines, and approaches to addressing HIV latency and eradication.

We have an active HIV R&D program to develop new HIV antiretroviral medicines that address unmet needs in HIV treatment. Among the clinical development programs currently underway are the development of a once-daily formulation of raltegravir, currently in Phase III trials, a novel second-generation non-nucleoside reverse transcriptase inhibitor in Phase III, and several earlier-stage clinical development programs, demonstrating our ongoing commitment to HIV therapeutic R&D.

PEDIATRICS

As part of the company's commitment to fighting HIV/AIDS, we have conducted extensive research and development (R&D) efforts to bring forth pediatric formulations for our HIV antiretrovirals (ARVs).

In 2007, we began collaborating with the National Institute of Allergy and Infectious Diseases (NIAID), the National Institute of Child Health and Human Development (NICHD) and the International Maternal Pediatric Adolescent AIDS Clinical Trials (IMPAACT) Network to conduct a Phase I–II, multicenter, open-label, noncomparative study to evaluate the safety, tolerability, pharmacokinetics and antiretroviral activity of ISENTRESS® (raltegravir) in children and adolescents: IMPAACT P1066. This study of three formulations—a film-coated tablet, a chewable tablet and granules for oral suspension—included more than 150 HIV-infected children ranging from 4 weeks to 18 years of age in the U.S., Latin America and Africa.

On the basis of results from this study, three formulations of ISENTRESS have now been approved by the U.S. Food and Drug Administration (FDA) and the European Medicines Agency for use in infants (as young as 4 weeks of age and weighing at least 3 kg), toddlers, children or adolescents. Both the chewable tablets and the granules for suspension are dosed based on weight.

Also in collaboration with IMPAACT, we are conducting multiple studies in neonates. IMPAACT P1097, which examined raltegravir levels in full-term infants born to mothers who have taken raltegravir in pregnancy (these infants were not given raltegravir directly), has completed enrollment. A new component of this study (P1097A) is ongoing, and is similarly examining raltegravir levels, but this time in low-birth-weight (including preterm) infants whose mothers have taken raltegravir in pregnancy. Building from the data generated in P1097, another study, IMPAACT P1110, of active raltegravir dosing to neonates at high risk for acquiring HIV infection, was initiated and has provided preliminary data to establish a well-tolerated and appropriate dose of raltegravir (granules for suspension formulation) for neonates from birth to 6 weeks of age. Final results of this study are anticipated to support the use of raltegravir from birth both as prophylaxis of mother-to-child transmission and as treatment of HIV-1 infection.

Efforts to register these three formulations of raltegravir broadly in the countries with the greatest pediatric HIV burden are ongoing. And as of October 2014, the pediatric formulations are registered in more than 45 countries.

The burden of pediatric HIV falls primarily on sub-Saharan Africa and on low- and lower-middle income countries. The lack of demand for pediatric HIV medicines in high-income developed countries provides little commercial incentive for the development of pediatric optimized combination formulations, such as the optimized combination formulations for adults. In May 2014, UNITAID—in cooperation with the Medicines Patent Pool (MPP) and the Drugs for Neglected Diseases initiative (DNDi)—announced an integrated partnership intended to increase access to pediatric HIV treatment by developing improved or new pediatric formulations of HIV medicines. In support of this initiative, we announced that we had entered into negotiations with the MPP for licenses for the pediatric formulations (chewable tablets and granules for suspension) of raltegravir.

In February 2015, we entered into an agreement with the MPP allowing for supply of generic pediatric raltegravir formulations in 92 low- and middle-income countries, where 98 percent of children infected by HIV live. Read the full press release.

INFECTIOUS DISEASES

NEGLECTED TROPICAL DISEASES

Neglected tropical diseases (NTDs) are a set of 17 diseases that disproportionately affect more than 1 billion people living primarily in the developing world.

As a leading cause of disability, NTDs carry with them significant social and economic burdens. However, as the World Health Organization (WHO) reports, many of these diseases can be effectively controlled, and in many cases, eliminated. Our company has a long-standing commitment to research into NTDs. We initiated research on MECTIZAN® (ivermectin) for use in humans for the NTD onchocerciasis (river blindness) in 1978, leading to the creation of the groundbreaking MECTIZAN Donation Program. Through a range of in-house programs and external partnerships, we continue to conduct research to address the burden of neglected tropical diseases today.

THE LONDON DECLARATION

We are an original signatory to the London Declaration, a collaborative effort launched in 2012 to accelerate progress toward eliminating or controlling 10 NTDs by the end of the decade. Our company joined 12 other global pharmaceutical companies and many other stakeholders, including endemic country governments, the WHO, the Bill & Melinda Gates Foundation, USAID, the UK Department for International Development (DFID), nongovernmental organizations (NGOs), and other organizations in this effort.

Together with the other pharmaceutical companies, we committed to continuing or increasing donations of medicines to treat or prevent these diseases. Donors committed financial resources, and NGOs agreed to support implementation needs. The partners came together under the banner of “Uniting to Combat NTDs” to track progress and identify gaps that need to be addressed in order to reach the goals of the London Declaration. Through the MECTIZAN Donation Program, we are helping to achieve the disease control and elimination goals for two diseases, onchocerciasis (river blindness) and lymphatic filariasis (LF).

Although existing tools are having a major impact, several NTDs require new or improved drugs and diagnostics to achieve the goals of the London Declaration. We are engaged in various efforts to advance progress toward developing new drugs and diagnostics. For example, together with several other companies, we are providing access to compound libraries with external researchers through the World Intellectual Property Organization’s Re:Search (WIPO Re:Search) Consortium and Drugs for Neglected Disease Initiative (DNDi). Learn more about our social licensing approach to combatting NTDs.

Taken together, through our drug donations for onchocerciasis and lymphatic filariasis and our research and development activities for schistosomiasis, visceral leishmaniasis and Chagas disease, we are supporting the London Declaration goals for five NTDs.

For more information on progress toward the London Declaration goals, click here.

For more information on our company’s drug donations for onchocerciasis and lymphatic filariasis, please refer to the MEC-

TIZAN Donation Program.

RESEARCH & DEVELOPMENT

WIPO Re:Search

Our company is one of the founding members of WIPO Re:Search, a consortium of public and private organizations that facilitates research on neglected tropical diseases, malaria and tuberculosis. Through this consortium, we entered into an agreement with researchers at the University of California, San Francisco (UCSF), later transferred to the University of California, San Diego (UCSD), providing scientists with a series of compounds for screening that have the potential to lead to better and safer treatments for patients suffering from schistosomiasis. This disease is caused by a blood-borne parasite, and affects millions of people living in the developing world.

Also through WIPO Re:Search, in late 2014 we entered into an agreement with researchers at the Walter and Eliza Hall Institute of Medical Research (WEHI) in Australia that supports collaboration focused on the research and development of antimalarial drugs that could potentially impact the replication of malaria. In 2015, our joint team was successful in applying for and receiving a Wellcome Trust Pathfinder Award.

In furtherance of our commitment to the WIPO Re:Search mission and community, we continue to provide relevant expertise to other WIPO Re:Search members as requested and appropriate.

G-FINDER Survey

To contribute to global awareness and advocacy on research and development (R&D) for NTDs, we participate in the annual G-FINDER survey. Since 2008, G-FINDER has reported on global investments in neglected disease R&D from a range of public and private institutions, and is considered a unique source of current information and insights into ongoing trends for stakeholders engaged in NTDs.

DNDi Collaboration

In May 2009, our company and the nonprofit organization DNDi entered into a collaboration to support the discovery and development of improved treatments for a range of NTDs. The initial partnership focused on trypanosome, derived NTDs, including visceral leishmaniasis (VL) and Chagas disease, both of which infect millions of people. We have recently expanded this partnership for 2016 to include investigation of macrofilaricidal agents (compounds that would kill adult worms that cause onchocerciasis and lymphatic filariasis) that would feed into further development activities conducted under the umbrella of the Bill & Melinda Gates Foundation–driven Macrofilaricide Drug Accelerator consortium described below.

Through a nonexclusive, royalty-free license to DNDi, we are contributing small-molecule assets and related intellectual property for DNDi to conduct early-development programs for drug candidates for treatment of NTDs, with the primary goal of manufacturing and distributing drugs at low cost to the public sector in resource-poor countries. In the anti-trypanosome effort, we have identified several series relevant for several NTD indications, each of which displays early promise and for which in vivo validation studies are being planned.

For the macrofilaricide effort, we have identified promising lead series with activity in a whole- worm assay. These leads were included in a compound collection that also included advanced compounds designed to allow rapid progression to in vivo efficacy studies, currently in progress. We will share joint intellectual property rights on drug candidates generated through early development, and our company will retain the option to undertake late clinical development and registration of these drugs.

Macrofilaricide Drug Accelerator

In 2015, our company became a founding member of the Macrofilaricide Drug Accelerator Program (MacDA), an effort driven by the Bill & Melinda Gates Foundation to support the members' collective work toward identifying and generating lead drug compounds to augment the global onchocerciasis and lymphatic filariasis drug pipelines. We have established collaborations within the MacDA membership in support of the program's goals to accelerate the discovery of such lead drug compounds, including the Liverpool School of Tropical Medicine. DNDi also is a key player in this effort, assisting Merck in the evaluation of lead molecules for in vivo efficacy.

Emerging Pathogens With Potential To Generate Severe Epidemics

Our company is currently collaborating with the United States Army Medical Research Institute of Infectious Diseases

(USAMRIID) and other organizations on research to determine the ability of our company's compounds, and biologics, to inhibit infectious disease organisms, including Ebola, Zika and related viruses that have the potential to generate severe epidemics and pose a threat to civilian and military populations.

CLINICAL RESEARCH

A Phase II investigational proof-of-concept clinical study to evaluate the oral antifungal agent posaconazole (marketed as NOXAFIL® oral suspension in the U.S., the EU and several other countries) for the treatment of chronic Chagas disease has been completed. In planning the study, we consulted with international agencies and research organizations to identify current medical needs and reach consensus on a study design using posaconazole in asymptomatic chronic Chagas disease. Unfortunately, this study did not show any benefit of Noxafil in the treatment of chronic Chagas disease, and no further evaluation is planned. The results of this study have been publicly presented and accepted for publication.

INFECTIOUS DISEASES

TUBERCULOSIS

Through the TB Drug Accelerator (TBDA) Program, our company is working to identify and develop new drugs against tuberculosis (TB) that can lead to shorter and better-tolerated regimens.

The TBDA is a groundbreaking collaboration between eight research institutions, eight pharmaceutical companies and a product development partnership to facilitate TB drug discovery. It has been designed and championed by the Bill & Melinda Gates Foundation.

Tuberculosis is a top infectious disease killer worldwide. In 2014, the World Health Organization (WHO) reported that 9.6 million people fell ill with TB and 1.5 million people died from the disease. Although TB is a treatable and curable disease, current treatments require patients to take multiple antibiotics for 6 to 24 months or longer are complicated to administer and can be toxic. These factors prevent people from accessing or completing their treatment, which can lead to the development of drug-resistant strains or death. There is an urgent need for new, better, faster-acting treatments.

Through the TBDA, companies share targeted sections of their compound libraries and data with one another and with academic research institutes, in order to develop the best drug prospects, regardless of where they originate. To date, scientists from four continents have tested over 3 million small molecules from corporate and other compound collections for screening. The immediate goal is to provide clinical proof of concept for a new regimen that can cure a patient with TB in only one month by 2024.

As of the end of 2015, our company has completed two large in-house screening campaigns. One was a screen of over 2 million compounds, and the second was a collaborative effort with TBDA partners using our proprietary Automated Ligand Identification System (ALIS) technology. Both screens delivered “hit packages,” and intra-TBDA partnerships have sprung from this work. In collaboration with TBDA partners, our company is progressing these promising molecules toward the identification of drug candidates.

ACCESS TO HEALTH

VACCINES

MAIN

We aim to increase population vaccine coverage and achieve the broadest possible access to our vaccines within a sustainable framework.

Vaccines are one of the most valuable health innovations in modern times, according to the World Health Organization (WHO), the U.S. Centers for Disease Control and Prevention (CDC), and other leading health authorities.[1,2,3,4,5] Our company's framework is one that allows ongoing research, development and distribution of innovative vaccines that address important unmet health needs. Consistent with our overarching Access to Health Statement of Guiding Principles, we have a comprehensive strategy.

OUR COMMITMENTS

- Support ongoing surveillance and assessments to understand infectious-disease trends and their impact on people
- Engage in innovative research and development (R&D) to provide vaccines that address vital global health needs
- Strive to maintain the highest standards of safety and product quality in all stages of vaccine development and manufacturing
- Invest in manufacturing improvements to help assure reliable product supply and lower production costs
- Use tiered (or differential) pricing—systematically pricing vaccines at differing levels appropriate to the value they create under economic conditions where they are used—to facilitate broad access
- Work with governments and nongovernmental organizations (NGOs) to build sustainable and effective vaccine delivery programs that reliably reach people

[1] WHO, UNICEF, World Bank. State of the world's vaccines and immunization, 3rd ed. Geneva, World Health Organization, 2009. http://whqlibdoc.who.int/publications/2009/9789241563864_eng.pdf?ua=1. Accessed September 23, 2014.
[2] Centers for Disease Control and Prevention. Ten Great Public Health Achievements—United States, 2001–2010. *Morb Mortal Wkly Rep.* 2011;60(19):619–623.
[3] Ibid.; 60(24):814–818.
[4] Centers for Disease Control and Prevention. Achievements in Public Health, 1900–1999 Impact of Vaccines Universally Recommended for Children – United States, 1990–1998. *Morb Mortal Wkly Rep*. 1999;48(12):243–248.
[5] World Medical Association. Statement on the Prioritisation of Immunisation. World Medical Association 63 General Assembly, 2012; Bangkok, Thailand. http://www.wma.net/en/30publications/10policies/v4/. Accessed September 23, 2014.

R&D

Our company conducts innovative research and development to provide vaccines that address vital unmet and emerging global health needs.

For more than 100 years, our scientists have been discovering vaccines that have been impacting lives. We remain one of the few companies dedicated to the complex business of researching and producing vaccines to address the public health burden of disease for people around the world.

We support the Sustainable Development Goal “Ensure healthy lives and promote well-being for all at all ages,” through our efforts to address two main causes of death from preventable or treatable disease in children under five years of age in the developing world—diarrheal and pneumococcal diseases[1]—as well as measles, mumps and rubella. In addition, our company is working with a number of collaborators, including global and national health organizations, to develop vaccines that target additional diseases of global significance, such as Ebola.

We are also working to develop a vaccine to prevent dengue. Each year, it is estimated that there are 390 million people infected with dengue viruses throughout the tropics and subtropics, resulting in up to 100 million cases of dengue fever, with at least 500,000 of those cases being classified as severe.[2] Furthermore, it is currently estimated that there are 3.97 billion people living in more than 140 countries where dengue transmission occurs, and there is no registered vaccine or specific therapy to protect these people at risk. In 2014 we in-licensed the NIH live attenuated vaccine candidate and we are working to start clinical trials as quickly as possible.

There are 100 million cases of dengue fever annually.

We seek to establish new business models and partnerships for research and development. A case in point is the MS-D-Wellcome Trust Hilleman Laboratories, headquartered in India. Hilleman Laboratories, founded in 2009, is the first-of-its-kind nonprofit research and development joint venture, with a mission to develop affordable vaccines for global health. Its expertise in medical research is targeted toward creating new vaccines in areas of unmet need as well as adapting existing vaccines for more effective delivery in low-income countries.

Since 2011, Hilleman Laboratories has been focused on a project to develop a heat-stable rotavirus vaccine including the development of a novel delivery device. Advancing closer to its vision of bridging the immunization gap in developing nations, Hilleman Laboratories initiated a Phase I/II clinical trial of its oral vaccine against rotavirus infection. After successful completion of the preclinical stage and securing necessary regulatory approvals, Hilleman Laboratories initiated enrollment of a clinical study to establish proof of concept for its heat-stable vaccine candidate in 2016.

Hilleman Laboratories also secured regulatory approval to conduct a Phase I/II clinical study of its oral cholera vaccine candidate in 2016.

In response to WHO's global call for increased Cholera vaccine supply, Hilleman Laboratories worked closely with academic institutions in Sweden as well as clinical and manufacturing organizations in Bangladesh, to bridge the gap between academia and biotech for the advancement of affordable lifesaving vaccines.

Hilleman Laboratories continues to engage the external global health community through various forums, including ongoing dialog with its Strategic Advisory Group, which is composed of leading health experts who provide the laboratories with input on customer needs, strategic direction and disease-area needs.

[1] UNICEF: Progress for Children Report, 2011
[2] www.denguevaccines.org

MANUFACTURING & SUPPLY

We invest in manufacturing improvements to help assure reliable product supply and lower production costs.

We continue to make investments in manufacturing capacity as part of our long-term strategy to reach more people around the world with our vaccines. As evidence of our progress toward supplying more of the globe, in 2015 nearly 60 percent of the vaccine doses provided went to ex-U.S. countries as compared to approximately 30 percent in 2010.

These investments demonstrate the company's continued commitment to providing high-quality vaccines to meet increasing global demand for these products. In addition, we continue to explore potential partnerships with low-cost manufacturers to bring down the cost of vaccines.

In 2015, nearly 60 percent of the vaccine doses provided went to ex-U.S. countries, as compared to approximately 30 percent in 2010.

We have a long history of progress in this area. Our hepatitis B license of technology to manufacturers in China dates back to the 1990s, and has resulted in over 100 million doses of recombinant hepatitis B vaccine being produced by our collaborators each year to address the public health burden of hepatitis B in China.

In 2014, together with the Instituto Butantan, a Brazilian biomedical research center and vaccine producer, we signed an agreement outlining the terms of a productive development partnership (PDP) for the technology transfer of our company's quadrivalent human papillomavirus (HPV) vaccine. This agreement culminates several years of work and follows the inclusion of GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant] in Brazil's National Immunization Program. Through this important transfer of vaccine technology, the government of Brazil will be able to fully support its long-term national vaccination efforts against HPV-related diseases.

PRICING

Our company works with governments, international health and development organizations, donor groups, nongovernmental organizations (NGOs), and others to support countries' population health aims and help improve sustainable access to our vaccines.

We use tiered pricing for vaccines as an equitable way to achieve twin objectives: to expand access to people who need vaccination, and also to ensure sufficient return on investment over time to support the complex and costly research and development and other activities necessary to create new vaccines.

We consider a variety of factors in arriving at a price in a given country, including public health need, health and economic value of the vaccine, the country's ability to support vaccine delivery and achieve population health coverage, its level of economic development, its fiscal capacity for investments in health and actual health spending, its mechanism and policies for procuring vaccines, and others.

In the developing world, our company's commitment to helping protect global health by improving the affordability, availability and accessibility of vaccines is fundamental to our business and overall mission. We offer ROTATEQ® (Rotavirus Vaccine, Live, Oral, Pentavalent) and GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant] at an access price that is significantly less than the price of these vaccines in developed markets. The access price is exclusive to the public sectors of the countries eligible for support from Gavi, the Vaccine Alliance (Gavi).

In 2015, we extended our current Gavi prices for ROTATEQ and GARDASIL through 2025 to Gavi-graduated countries with a per-capita GNI not exceeding US$3,200. This action greatly assists in meeting the needs of the developing world by facilitating access to these innovative vaccines in the poorest countries, while making sure they remain affordable and sustainable in the long term. We believe that our pricing approach contributes to wider access to our vaccines, while taking into account our need to continue investing in vaccine research, development and production.

For additional information regarding pricing, see Public Policy Statement: Access to Our Vaccines.

STAKEHOLDER ENGAGEMENT

Our partnership with Gavi and other alliance partners is helping to ensure that infants and girls in the poorest countries have access to rotavirus and HPV vaccines.

Through active engagement with Gavi, we have helped to foster an environment that led to mobilization of funding and partner technical support for the introduction of new vaccines in the world's poorest countries. Focusing on the anticipated need for our Human Papillomavirus (HPV) and rotavirus vaccines, GARDASIL and ROTATEQ, our company collaborated with Gavi and other members of the alliance, including UNICEF, to understand estimated country demand for the vaccines over time, and to determine the lowest possible access prices that could be sustainably offered to Gavi and UNICEF for the vaccine volumes to be delivered to these poorest countries.

To date, 17 countries approved by Gavi for HPV have selected GARDASIL, and 6 Gavi countries are using ROTATEQ. This has resulted in more than 15 million doses of GARDASIL and ROTATEQ being shipped to Gavi-eligible countries throughout 2015.

EBOLA

Our collaboration with partners on an Ebola vaccine is working in an unprecedented way to quickly respond to a global health crisis in West Africa.

The Ebola epidemic that was first reported in 2014 is the largest in history, and has taken a devastating toll on affected countries in West Africa. Although this outbreak has been largely contained, sporadic cases of disease continue to be reported and eliminating the outbreak at its source in West Africa is a critical international health priority.

To respond to the Ebola crisis that started in 2014, we joined with the international health community in efforts to eliminate the Ebola outbreak and put necessary steps in place to help prevent another.

As part of our longstanding commitment to developing medicines and vaccines to address infectious diseases, our company licensed a vaccine candidate to prevent Ebola Zaire virus from NewLink Genetics Corporation in late 2014. The candidate was originally developed by the Public Health Agency of Canada.

We are collaborating with a number of governmental and nongovernmental organizations to advance this vaccine candidate to licensure as quickly as possible.

Development of our company's investigational Ebola vaccine candidate has been supported through extraordinary collaborative efforts from leading global and national health organizations, including the World Health Organization, the U.S. Centers for Disease Control and Prevention(CDC), the National Institute of Allergy and Infectious Diseases, the Walter Reed Army Institute of Research, the Canadian Immunization Research Network, and the U.S. Army Medical Research Institute of Infectious Diseases.

Major funders in bringing our investigational Ebola vaccine candidate forward include the U.S. Defense's Defense Threat Reduction Agency (DTRA) and Joint Vaccine Acquisition Program (JVAP), the U.S. Department of Health and Human Service's Biomedical Advanced Research Development Authority (BARDA), the National Institutes of Health (NIH) and the Wellcome Trust.

The vaccine candidate has undergone Phase I studies, and sufficient safety and immune response data were generated to support moving the vaccine forward for Phase II/III testing. Phase II/III testing was initiated with studies starting in Liberia in February 2015, in Guinea in March 2015, and in Sierra Leone in April 2015. Consequently, the vaccine candidate has been able to move quickly into three large-scale trials in affected countries in West Africa.

The preliminary results from the Guinean clinical study suggest a potential role for our company's vaccine candidate and the study is continuing. Additional studies are also underway to help define the vaccine candidate's safety and efficacy profile.

We are also committed to providing the vaccine to Gavi-eligible countries at the lowest possible access price if the vaccine meets regulatory standards for safety and effectiveness in clinical trials and is appropriately licensed. Furthermore, we have signed an agreement with GAVI, the Vaccine Alliance, that was announced during the Annual Meeting of the World Economic Forum in Davos,Switzerland in January. Under the Advance Purchase Commitment, Gavi has provided $5 million towards the development of our company's rVSV?G-ZEBOV-GP live attenuated Ebola Zaire vaccine, on the

understanding that it will be submitted for licensure by the end of 2017. If approved, the vaccine candidate would become one of the world's first licensed Ebola vaccines and Gavi would be able to begin purchasing the vaccine to create a stockpile for future Ebola Zaire virus outbreaks.

On December 23, 2015, we announced that the application for Emergency Use Assessment and Listing (EUAL) for the company's investigational Ebola Zaire vaccine, V920 (rVSV-?G-ZEBOV-GP, live attenuated), has been accepted for review by the World Health Organization (WHO). According to the WHO, the EUAL process is designed to expedite the availability of vaccines needed for public health emergencies such as another outbreak of Ebola. The procedure is intended to assist United Nations procurement agencies and Member States on the acceptability of using a vaccine candidate in an emergency-use setting. EUAL designation is not prequalification by WHO, but rather is a special procedure implemented when there is an outbreak of a disease with high rates of morbidity and/or mortality and a lack of treatment and/or prevention options. In such instances, WHO may recommend making a vaccine available for a limited time, while further clinical trial data are being gathered for formal regulatory agency review by a national regulatory authority.

Through all of these efforts, we hope to expedite the development of a vaccine for Ebola and, if demonstrated to be efficacious and well-tolerated, to make it available to individuals and communities at risk of Ebola Zaire virus infection around the world.

ROTAVIRUS

We are pursuing multiple approaches to increase global access to ROTATEQ® (rotavirus vaccine, live, oral, pentavalent).

Rotavirus gastroenteritis is a leading cause of severe diarrhea in infants and young children. Africa accounts for a large proportion of the global total of rotavirus deaths with nearly a quarter of a million African children dying from the dehydrating diarrhea caused by rotavirus infection every year.[2] Since 2009, the World Health Organizations's (WHO's) Strategic Advisory Group of Experts (SAGE) has recommended the inclusion of rotavirus vaccination in all national immunization programs, helping to ensure access to rotavirus vaccines in the world's poorest countries.[3]

Since 2006, 163 million doses of ROTATEQ have been distributed worldwide.

We believe that we have an important role in contributing toward this goal. Since its launch in 2006, ROTATEQ has been registered and approved in more than 120 countries, and approximately 163 million doses have been distributed worldwide (numbers as of December 2015). Together with our partners, including country governments, Gavi, the Vaccine Alliance (Gavi) and other stakeholders, we are working to expand access to rotavirus vaccines to help address this problem. Currently, six Gavi-eligible African countries have launched national immunization programs using ROTATEQ.

A case study[4] conducted by the Agence de Médecine Préventive (AMP) on the introduction of ROTATEQ in Burkina Faso concluded that the introduction was successful and the three-dose schedule integrated well into the current schedule of the National Immunization Programme. This evaluation enabled identification of challenges and provided solutions, useful information for countries planning to introduce rotavirus vaccines. We continue to evaluate and implement approaches aimed at improving product attributes to better meet the specific needs of low- and middle-income countries in the future. This includes work to develop a heat-stable rotavirus vaccine being conducted through the MSD-Wellcome Trust Hilleman

Laboratories.

[1] Tate, J., et al., "2008 estimate of worldwide rotavirus-associated mortality in children younger than 5 years before the introduction of universal rotavirus vaccination programmes: a systematic review and meta-analysis" *Lancet*, February 2012, p. 136.
[2] "Preventing Rotavirus Disease in The Gambia." *RotaFlash*, August 15, 2013.
[3] http://www.who.int/mediacentre/news/releases/2009/rotavirus_vaccines_20090605/en/index.html, Accessed March 6, 2013.
[4] *Global Immunization News (GIN)* August 2014: Burkina Faso AMP.

CERVICAL CANCER

Our company is committed to supporting public health initiatives that increase access to vaccines where they are most needed.

In March 2014, more than 5,000 municipalities in Brazil kicked off the national campaign of human papillomavirus (HPV) vaccination using GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant] to vaccinate appropriate girls in Brazil ages 9–13. In Brazil, cervical cancer is a leading cause of death in women, with more than 5,000 women dying of the disease each year.[1] GARDASIL is now being supplied to the National Immunization Plan (NIP) through a partnership between our company and Instituto Butantan, a Brazilian biomedical research center and vaccine producer.

This partnership highlights our commitment to working closely with governments and scientific institutions to ensure broad and sustained access to GARDASIL. We have a long-standing commitment to helping improve access to GARDASIL in developing countries, where more than 85 percent of the world's cervical cancer cases occur.[2] We have engaged in a number of multidisciplinary partnerships that help resource-poor countries gain access to HPV vaccination.

HPV VACCINATION PARTNERSHIPS

In September 2012, the Republic of Uganda, through the ministry of health (MoH) and supported by our company, announced the launch of a vaccination program with GARDASIL. Through this agreement with our company, the vaccination program was implemented with just under a half million doses of GARDASIL donated to 12 districts in Uganda, enough to vaccinate approximately 140,000 eligible girls 9 to 13 years of age over a two-year period. The program represented the first phase of Uganda's national rollout plan for HPV vaccination. As a result of phase 1, Uganda launched its full national HPV-vaccination program in 2015 with support from Gavi. the Vaccine Alliance (Gavi).

A young girl is vaccinated during the September 2012 phased launch of a national vaccination program with GARDASIL in the Republic of Uganda.

In 2015, our company concluded a six-year partnership with the Royal Government of Bhutan and the Australian Cervical Cancer Foundation (ACCF) aimed at reducing incidence of cervical cancer in Bhutan. Through this partnership, Bhutan became the first developing nation in the world to implement a national cervical cancer vaccination program.

The first year of the program provided an opportunity for appropriate girls and young women from ages 12 to 18 to be vaccinated with GARDASIL, and achieved an approximately 90 percent vaccination rate for all three doses, according to the Bhutan MoH. In subsequent years, the program continued to provide an opportunity for appropriate 12-year-old girls to be vaccinated with GARDASIL. Analysis of the program by the MoH has been instrumental in better understanding the critical success factors in successful implementation, such as a school-based delivery platform and support from the education system[4]. These programs in Uganda and Bhutan are serving as models for other developing countries that aspire to implementing national cervical cancer vaccination programs.

CERVICAL CANCER PREVENTION & TREATMENT PARTNERSHIPS

Our company continues to work to create novel partnerships that take a comprehensive approach to cervical cancer prevention and treatment. For instance, in September 2011, we announced plans to contribute $3 million to Pink Ribbon Red Ribbon™(PRRR) to address both cervical and breast cancer in sub-Saharan African nations. PRRR is a historic initiative that brought together public- and private-sector partners, including Susan G. Komen for the Cure®, the George W. Bush Institute, the President's Emergency Plan for AIDS Relief (PEPFAR), UNAIDS, the U.S. government, and corporate organizations. Through this commitment, we continue to work with Susan G. Komen for the Cure to support the initiative.

Throughout 2015, activities focused on the countries of Tanzania and Zambia, including a donation of equipment to expand screen-and-treat services for cervical pre-cancer in Tanzania, programs to raise the national awareness of available cervical and breast cancer services, the improvement of treatment protocols for breast cancer, mobilization of the community in efforts against cervical cancer, and provisions of advanced surgical training to physicians in Zambia. In 2015, PRRR added activities in Ethiopia to bolster the country's commitment to breast and cervical cancer prevention and care, which includes HPV vaccination with GARDASIL.

In 2013 and 2014, Botswana, with support from our company and from PRRR, successfully completed a two-year HPV-

vaccination demonstration project to gain experience for an anticipated national HPV-vaccination rollout. The project provided the ministry of health with valuable learning that guided the rollout of the national program, which completed its first campaign in 2015. Secondary cervical cancer prevention and treatment are being supported through PRRR partners providing community awareness, increased capacity through health care worker training, and screening and treatment equipment.

Also in 2013, following our previous donation of 180,000 doses of GARDASIL through the GARDASIL Access Program, for a two-year HPV-vaccination demonstration program in three districts, we agreed to donate an additional 30,000 doses to the Zambian MoH for a third year of the program. Together with PRRR partners, we have also provided technical support for the program, which continues in 2016. Results to date indicate that in 2015–2016, 87 percent of the targeted population of girls received the first two vaccine doses. The Zambia MoH is leveraging the results of this program to make preparations for a transition to a Gavi-supported HPV-vaccination program.

COMMITMENT TO SUPPORT HPV VACCINE INTRODUCTION

Beginning in 2006, we partnered with the international nonprofit organization PATH to provide GARDASIL for the conducting of post-licensure HPV-vaccine demonstration projects in Peru, Vietnam and India. GARDASIL was provided to vaccinate approximately 30,000 appropriate girls participating in “HPV Vaccines: Evidence for Impact” demonstration projects. The overall initiative was designed to strengthen the capacity of developing countries to prevent cervical cancer by generating and providing necessary evidence for public-sector introductions of HPV vaccines, informing global advocacy efforts and providing analyses to help accelerate access to HPV vaccines. The projects suggest that high coverage with HPV vaccines can be achieved through various delivery strategies in the countries studied.

Additionally, through the charitable GARDASIL Access Program, we donated more than 1.3 million doses of GARDASIL for use in smaller-scale HPV-vaccination projects in eligible lowest-income countries around the world. The program, which came to a conclusion in 2015, has enabled organizations and institutions in 21 countries to gain operational experience in designing and implementing HPV-vaccination projects, with the goal of supporting the development of successful child and adolescent immunization models.

As of March 2016, seven countries (Cameroon, Ghana, Kenya, Mali, Tanzania, Uganda and Uzbekistan) that participated in the GARDASIL Access Program are among the first approved by Gavi for HPV programs using GARDASIL, and five of the programs are already underway.

In addition, Lesotho, which completed two HPV-vaccination projects with the support of the GARDASIL Access Program, continues to conduct a national program with its own resources.

For additional information regarding our Patient Assistance Programs, please click here.

[1] Globocan 2012 data Accessed March 20,2014. http://globocan.iarc.fr/old/bar_pop.asp?selection=24076&title=Brazil&sex=2&statistic=0&window=1&grid=1&color1=5&color1e=&color2=4&color2e=&orientation=1&submit=%C2%A0Execute.
[2] CDC Global Health, p.1A.
[3] WHO 2010 Summary Report, p. 4A.
[4] Dorji, et al., “Introduction of a National HPV vaccination program into Bhutan.” *Vaccine,* June 2016, p. 3,726.

ACCESS TO HEALTH

WOMEN'S HEALTH

MAIN

The private sector has an important role to play in contributing to the achievement of the United Nations' new Sustainable Development Goals[1] regarding women's health.

OUR COMMITMENTS

- Facilitate sustained access for our family planning products and services, and engage in partnerships that address specific reproductive health and development challenges.
- Sustainable Development Goal 3 sets two targets in support of the overall health of women, families and society:
  - By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
  - By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs

While progress was made toward these targets under the original Millennium Development Goals that sunset in 2015, rates of maternal mortality remain high in many countries, and access to modern contraceptive methods remains limited, especially among the poorest and most vulnerable women and girls. As the global community embraces the new Sustainable Development Goals launched in September 2015, we will continue to support efforts to accelerate access to our products and ensure that reproductive health and rights are included in global, regional and country strategies.

Access to modern contraceptives is an important aspect of family planning.

Enabling couples to determine whether, when and how often to have children is vital to helping achieve safe motherhood,

healthy families and healthy communities. Voluntary family planning and broadening the method mix of family planning options help protect the health of women by reducing high-risk pregnancies, and help protect the health of children, adolescents and mothers by allowing sufficient time between pregnancies. Research has shown that appropriately spacing pregnancies helps improve both mother and child survival rates and reduces the risk of preterm birth.[2] The use of family planning methods can also reduce the number of unsafe abortions and associated complications.[3]

Access to modern contraceptives is an important aspect of family planning. Our multifaceted approach supports efforts to improve access to family planning services and contraceptives for the women most in need of them. We are actively engaged in areas where maternal mortality is high and the prevalence of contraceptive use is low.[4]

[1] http://www.un.org/sustainabledevelopment/sustainable-development-goals/
[2] http://www.marchofdimes.com/news/jul19b_2011.html, www.guttmacher.org/pubs/AddingItUp2009.pdf
[3] Singh, S., et al., Guttmacher Institute and United Nations Population Fund; 2009.
[4] http://www.everywomaneverychild.org/networks/life-saving-commodities

PARTNERSHIPS

We participate in a number of coalitions that support women's reproductive health by increasing access to family planning, working to reduce maternal mortality and promoting collaboration between the public, private and not-for-profit sectors.

Throughout the world, we have partnered with organizations and supported projects that work to increase women's access to health services, reduce maternal mortality, increase awareness of reproductive/sexual health among adolescents and vulnerable populations, prevent mother-to-child transmission of HIV/AIDS, and promote women's empowerment and access to economic opportunities.

PARTNERING FOR IMPLEMENTATION

Reproductive Health Supplies Coalition (RHSC): The RHSC is a global partnership of public, private and nongovernmental organizations dedicated to helping all people in low- and middle-income countries gain access to and use affordable, high-quality supplies that ensure better reproductive health.

The Coalition brings together diverse agencies and groups with critical roles in providing contraceptives and other reproductive health supplies. These include multilateral and bilateral organizations, private foundations, governments, and civil society and private-sector representatives. We participate in various RHSC working groups, including the Market Development Approaches Working Group, which contributes to the goal of reproductive health supply security.

The C-Exchange: Brought together under the auspices of the global advocacy organization Women Deliver, the C-Exchange is a private-sector forum that aims to inform, engage and support members in their efforts to improve the health and well-being of girls and women.

Family Planning 2020 (FP2020): FP2020 works with governments, civil society, multilateral organizations, donors, the private sector, and the research and development community toward enabling 120 million more women and girls than have access to contraception today to use contraceptives by 2020. It is based on the principle that all women, no matter where they live, should have access to lifesaving contraceptives, and supports the UN Secretary-General's global effort for women's and children's health. In May 2013, we commited to reduce the cost of our implants by approximately 50 percent for six years, through 2018. In November 2015, we extended this commitment to FP2020 by five years through 2023, to offer access pricing for IMPLANON® (etonogestral implant) and IMPLANON NXT® (etonogestral)—our single-rod, long-acting, reversible contraceptive implants–to eligible countries.

For an update on FP2020 progress since it was created in 2012, click here.

For more information on how we partner with customers and other stakeholders, please visit our Access to Reproductive Health section.

PERFORMANCE

The following metrics are for our family planning products intended for underserved segments of the world's poorest countries (defined as Family Planning 2020 Countries[1]) that are supplied through the public sector and social marketing organizations.

	IMPLANON® or IMPLANON NXT®	EXLUTON®	MARVELON 28®
FP2020 countries where product is registered/# pending IMPLANON NXT®(etonogestrel implant)[1]	41/9	25	24
FP2020 countries in which we supplied product	42	6	7
Women reached in FP2020 countries[2]	5,536,439	417,675	188,427

[1] There are additional unregulated markets where our products may be available that are not represented by these numbers.
[2] Number represents potential number of women who could be reached based on number of products provided.

WOMEN'S HEALTH

ACCESS TO REPRODUCTIVE HEALTH

Our commitment to providing access to reproductive health starts with our research and development, which has resulted in a diverse portfolio of contraceptive products.

Beyond our research, we continue to work hard to develop sustainable business models that will help improve access to our products for the people who need them most. Our partnerships with governments, international organizations and nongovernmental organizations (NGOs) help support and implement programs and policies that improve access and promote capacity-building by helping to train health care professionals and address barriers to care.

RESEARCH & DEVELOPMENT

We have a strong legacy of research and development of contraceptive products that have supported women's family planning efforts. Over the years, we have been responsible for the development of a wide range of contraceptive options, including a single-rod contraceptive implant, a once-monthly vaginal contraceptive ring, and progestin-only and combined oral contraceptives.

In 2015, our researchers continued to develop new formulations of our existing women's health products to better meet conditions in developing countries.

SUSTAINABLE BUSINESS MODEL TO PROMOTE ACCESS

We are committed to making our contraceptive products available to women around the world. We take a comprehensive approach to access that includes high-quality manufacturing and supply chain management; extensive registration and World Health Organization (WHO) prequalification for a wide variety of our family-planning products; responsible commercialization that incorporates training and capacity-building; policy advocacy; and community investment.

In developing countries that have high rates of maternal mortality and low rates of contraceptive prevalence, we have created a sustainable business model to promote access to contraceptive health programs. These activities are focused primarily on sub-Saharan Africa and countries in Asia and Latin America with high unmet need. Through this model, we

work closely with core global partners and their regional and local affiliates?including UNFPA, USAID, Marie Stopes International, the International Planned Parenthood Federation, DKT International, the Clinton Health Access Initiative, the Bill & Melinda Gates Foundation and Population Services International?to help expand access to our products.

HIGH-QUALITY MANUFACTURING & SUPPLY CHAIN MANAGEMENT

We work to ensure that we have sufficient manufacturing capacity to meet short-, medium- and long-term availability of our contraceptive products for reproductive health programs conducted by governmental organizations, NGOs and other customers.

We continuously examine our supply chain seeking to reduce inefficiencies, optimize yields and lower costs of production, and have passed these savings on to our customers in the form of lower prices, particularly in lower-income markets. We also invest in new technologies to increase the efficiency of our operations and to be able to produce more affordable products at the same high quality to meet increasing demand.

REGISTRATION & PREQUALIFICATION

We seek to ensure global access to our contraceptive products by obtaining and maintaining up-to-date product registrations around the world. In addition to existing and in-process registrations, numerous registrations are planned for products in countries of various income levels.

REGISTRATION

The following metrics are for our family planning products intended for underserved segments of the world's poorest countries (defined as Family Planning 2020 or FP2020 countries) that are supplied through the public sector and social-marketing organizations. In 2015, IMPLANON NXT® (etonogestral) was approved in several FP2020 countries including, but not limited to, Bangladesh, Ethiopia, Madagascar, Sudan, Tajikistan and Uganda.

Note: For World Bank country classifications, please click here.

	IMPLANON® or IMPLANON NXT®	EXLUTON®	MARVELON 28®
Product is WHO Prequalified	Yes	Yes	Yes
FP2020 countries where product is registered / # pending IMPLANON NXT[1]	41/9	25	24
FP2020 countries in which we supplied product	42	6	7
Women reached in FP2020 countries[2]	5,536,439	417,675	188,427

[1] There are additional unregulated markets where our products may be available that are not represented by these numbers.
[2] Number represents potential number of women who could be reached based on number of products provided.

PREQUALIFICATION

In order to facilitate institutional purchases of family planning products and provide quality assurance, we have secured WHO prequalification for EXLUTON (lynestrenol), IMPLANON (etonogestrel implant), IMPLANON NXT (etonogestrel implant) and MARVELON 28 (desogestrel-ethinyl estradiol).

Product	International Nonproprietary Name (IN)	Date of Prequalification
MARVELON 28	Ethinylestradiol + Desogestrel	October 21, 2010
IMPLANON	Etonogestrel	June 18, 2010
EXULTON	Lynestrenol	June 18, 2010
IMPLANON NXT	Etonogestrel	May 23, 2013

COMMERCIALIZATION

The success of reproductive health programs in the developing world relies upon the close cooperation and coordination of many partners. They include pharmaceutical companies like ours that discover, develop and manufacture contraceptive products; national governments that seek to support family planning through policies that increase the use of contraception and through investment in both procurement and capacity-building; international, bilateral and multilateral donors that finance the purchase of reproductive health commodities and invest in service delivery management and implementation; NGOs that support implementation of such programs; and health care professionals and health extension workers who counsel and provide care for women around the world.

As one of many partners, we take the following steps (details below) to support family planning programs and to help increase awareness of and access to a broad choice of contraceptive products:

- Requests for quotation
- Pricing
- Partnering for implementation
- Public advocacy

REQUESTS FOR QUOTATION

Our company receives and responds to "Requests for Quotation" from developing countries' governments seeking supplies for their own programs (financed by government funds, by multilateral organizations like the World Bank or through bilateral aid); from donor country aid agencies (e.g., the U.S. Agency for International Development [USAID], the U.K. Department for International Development [DFID], and KfW, a German government-owned development bank) seeking to purchase reproductive health commodities that will be donated to programs in one or more countries; from multilateral agencies, such as the United Nations Population Fund (UNFPA), donating to one or more countries; or from nongovernmental agencies seeking supplies for programs that they manage in one or more countries.

In responding to these requests, we adhere to the specific guidelines of each proposal and acts in full compliance with local and international laws and requirements.

PRICING

For contraceptive product pricing, we consider a nation's level of economic development and other relevant factors, including the types of family planning programs implemented by the local government.

In upper-middle-income and high-income countries, we provide our products at prices that take into account the innovation and value they represent. With a commitment to making our contraceptive products available to the public sector, we also offer discounts to organizations that serve women of all income levels, like Planned Parenthood affiliates, so that the women who rely on their services have routine access to contraceptive options that include nondaily and long-acting reversible methods.

We believe that our pricing approach will help improve product availability while also allowing the company to continue to invest in research, development, production, and the training and education necessary to help ensure appropriate counseling on and use of our products.

We are extending our access pricing to targeted countries through 2023, an additional five years beyond the expiration of our 2013 agreement.

In May 2013, our company and a group of public- and private-sector partners announced an agreement to expand contraceptive access and options for millions of women in some of the world's poorest countries. Under the agreement, we reduced the cost of IMPLANON and our next-generation implant, IMPLANON NXT (by approximately 50 percent for the next five years (through 2018) in the targeted poorest eligible countries of focus for the reproductive health community. Learn more.

Since 2013, the number of IMPLANON and IMPLANON NXT implants provided to countries under the agreement has doubled, bringing greater choice to millions of women in the world's poorest regions.

In November 2015, we announced our decision to extend our access pricing to these same targeted countries through 2023, an additional five years beyond the expiration of the 2013 agreement. Learn more.

PARTNERING FOR IMPLEMENTATION

For family planning programs in the developing world involving our contraceptive implants IMPLANON and IMPLANON NXT, the company requires the recipient governments and partnering NGOs to sign its Cooperation Agreement for the Receipt and Use of IMPLANON (CARUI). The cooperation agreement includes:

- Our commitment to a comprehensive service approach that provides and/or supports capacity-building in service delivery, including pre- and post-insertion counseling and insertion/removal training
- Distribution requirements that must be met by our company and local partners to ensure that all clinics/providers meet training and quality assurance requirements, provide sustained services over the duration of the product's life (three years) and can access referral centers in case more specialized care related to IMPLANON is required
- Our commitment to "training of trainers" and providing training materials, including audiovisual materials, training kits, artificial arm models and placebos; we may provide additional technical assistance for direct and cascaded training activities by health care providers with our local partners on a case-by-case basis
- Procedures to report product complaints and adverse events
- Provisions regarding compliance with the applicable laws of the U.S. and the recipient country, and our ethical and business compliance policies

In the countries where our products are included in family planning programs, we work closely with ministries of health and local implementing partners, who play a pivotal role in supporting training, counseling and other related activities. Our local implementing partners have included Jhpiego, EngenderHealth, Clinton Health Access Initiative, Marie Stopes International (MSI), International Planned Parenthood Federation (IPPF), Population Services International, DKT and Pathfinder International. Such collaboration ensures that countries have the expertise and support they need to achieve their reproductive health objectives.

In February 2015, we announced, as part of our commitment to health care provider training, that we would provide IMPLANON NXT placebo training applicators at no cost in FP2020 countries. During 2015, we provided approximately 75,000 placebos. We have also committed to providing placebos at no cost in these countries through 2017.

In 2015, we worked with more than 42 countries in sub-Saharan Africa, Asia and Central America to provide contraceptive products through numerous partnerships with governments, donors and NGOs. Some of the countries we engaged with included Madagascar, Ethiopia, Kenya, Uganda, Tanzania, Nigeria, South Africa, Honduras, Somalia, South Sudan, Yemen, Pakistan, Cambodia and Bolivia.

In 2015, we worked with partners in innovative ways to further expand awareness and access and strengthen health

systems. For example:

- In Kenya and the Democratic Republic of Congo, we worked with the government and local stakeholders to shine a spotlight on the need for improved access to family planning for adolescents. Attendees from both workshops are now developing action plans.
- In Nigeria, we provided support to the Human Network International for the development of a free, on-demand Information Service via mobile phones. The service provides information on health, agriculture, microfinance, family planning, and land tenure in the local language.
- In the Philippines, we worked with the Department of Health (DOH) to design and develop a family planning registry that now serves as a data collection tool to support the government's measurement of contraceptive prevalence rates, method effectiveness, and commodity utilization among others. Ultimately, the software can be integrated into the government's existing database management system and can help health care providers with client follow-up, referrals and adverse event reporting.

PROVIDING HOPE IN THE AFTERMATH OF TRAGEDY

The small land-locked country of Nepal is home to more than 27 million people. Most Nepali people live in remote villages that are difficult to reach and lack public health services. As a result of these challenges, the landlocked country in South Asia faces several major health issues, including high rates of maternal mortality and unmet need for family planning.

In March 2015, the government of Nepal pledged to reposition family planning to foster sustainable social and economic development and to address barriers to accessing family planning services faced by individuals and couples, including adolescents and youth, those living in rural areas, migrants and other vulnerable or marginalized groups. The government also pledged to broaden the range of modern contraceptives available and to engage in a range of communications and media activities to raise awareness of family planning among populations with a high unmet need for modern contraception, focusing particularly on adolescents and young people.

Less than one month after this historic commitment, tragedy struck; Nepal experienced a massive earthquake that killed more than 8,000 people and injured more than 21,000. The effect of the earthquake and its aftermath was most pronounced on those in rural communities.

Recognizing that help was needed, Sunualo Parivar Nepal (SPN), the implementing partner of Marie Stopes International (MSI) Nepal, set out three months after the earthquake to train providers on the use of long-acting contraception and to equip them with the skills to travel to remote areas to provide services to women in need. SPN/MSI Nepal is also supporting the Family Health Division (FHD) in conducting a pilot survey to test feasibility and acceptability of Implanon NXT among women in Nepal. Our company assisted in the master training program for 12 service providers organized by SPN/MSI Nepal on single rod contraceptive implant (Implanon NXT) including technical update on contraceptives, client assessment and counselling for long acting contraceptives. This pilot study is funded by UNFPA Nepal and is being implemented by SPN/MSI Nepal under the leadership of FHD.

PUBLIC ADVOCACY

We support the ambitious but, we believe, achievable goal set by the public health community in 2012 of ensuring that voluntary lifesaving family planning information, services and products reach an additional 120 million women and girls in the world's poorest countries by 2020.

MAIN

Our global animal health business is dedicated to preserving and improving the health, well-being and performance of animals through science.

We offer veterinarians, farmers, pet owners and governments the widest range of veterinary pharmaceuticals, parasiticides, vaccines and health management solutions. Healthier animals mean sustainable food supplies, protection against zoonotic diseases[1], reduction of the burden of certain food-borne diseases, and longer, richer companionship for pet owners.

Our animal health business employs more than 6,500 people worldwide and is present in more than 50 countries.

2015 PERFORMANCE HIGHLIGHTS

- Acquisition of Harrisvaccines, a privately held company that develops, manufactures and sells vaccines for food production and companion animals. Harrisvaccines has a unique RNA particle technology that represents a breakthrough in vaccine development. It also has a highly versatile production platform able to target a wide range of viruses and bacteria. In October 2015, Harrisvaccines was awarded an avian influenza stockpile contract from the United States Department of Agriculture (USDA) for the company's avian influenza vaccine, RNA, which had been granted USDA conditional licensure earlier in 2015.
- European launch of PORCILIS® PCV M Hyo®, Europe's first single-shot vaccine to protect piglets from both porcine circovirus type 2 and *Mycoplasma hyopneumoniae* PORCILIS PCV M Hyo comes ready to use and does not require mixing, saving labor and time, and reducing the potential for handling error.

- European approval for PORCILIS® PCV ID, the first intradermal vaccine against porcine circovirus type 2 (PCV2) that is administered with the needle-free IDAL® vaccine delivery system. With this addition to the company's line of intradermal vaccines, swine producers will now have access to intradermal needle-free protection against PCV2, *Mycoplasma hyopneumoniae* (M. hyo) and porcine reproductive and respiratory syndrome virus (PRRSv), the three major swine diseases affecting pig operations worldwide.
- Global launch of the IDAL® 2G vaccination device for pigs. The second generation of our needle-free IDAL vaccine delivery system, IDAL 2G has additional features that give the user more information and make the system easier to use.
- European launch of INNOVAX®-ILT, our company's novel vaccine that, in a single shot, protects poultry against infectious laryngotracheitis (ILT) as well as Marek's disease, for use in the European Union. INNOVAX-ILT is our Animal Health Business' first vector vaccine to launch in the EU, and is the first and only vector vaccine available in the EU to protect against ILT.
- USDA conditional product license for canine influenza vaccine H3N2, to protect against this newly identified strain of canine influenza virus, making the vaccine available to U.S. veterinarians
- Expansion of educational initiatives like the Convenience Program Evaluation, to help producers troubleshoot disease outbreaks, optimize vaccination processes, and maintain the health of their poultry the High Quality Congress website, to support producers of aquaculture, poultry and swine, bringing together a wide range of experts to discuss the latest advances in production and management across these species to ensure the success of producers by improving the health, productivity and well-being of their animals; and "Are you missing the signs?," a global awareness campaign designed to help cat owners recognize the signs of feline hyperthyroidism.

Our animal health business employs more than 6,500 people worldwide and is present in more than 50 countries. We operate a global network of manufacturing sites and dedicated R&D facilities, and offer products for various species, including ruminants (cattle, sheep, goats), poultry, swine, aquatic animals and companion animals (dogs, cats, horses) in 150 countries. Our animal health business focuses our corporate responsibility efforts in the following areas:

- Protecting animal health
- Contributing to public health
- Supporting a sustainable, global food supply and managing our global footprint
- Ensuring ethical business practices

Note: This section includes information about how Merck & Co., Inc., Kenilworth, NJ, USA, contributes to societies through its Animal Health business. Information and data on the performance of our Animal Health business in the environment and in other areas is contained within the main sections of our global corporate responsibility report.

[1] Zoonotic diseases are any disease or infection that is naturally transmissible from vertebrate animals to humans or vice versa (World Health Organization). Food-borne diseases in general encompass a wide spectrum of illnesses caused by microbial, parasitic or chemical contamination of food.

PERFORMANCE

Performance	2013	2014	2015
Number of rabies vaccines donated annually to Afya projects (doses)[1]	200,000	200,000	280,000
Value of equine vaccines donated annually to the Unwanted Horse Veterinary Relief Campaign	$125,000	$115,000	$107,000
Number of annual rabies vaccinations carried out in collaboration with the Global Alliance for Rabies Control and the Bombay Veterinary College (doses)[2]	50,000	15,000	--
Number of new products approved (annually)	5	8	10

[1] Afya project support in 2015 includes donations to Sarah Cleaveland's efforts in the Serengeti and Mission Rabies.
[2] As of 2015, these funds have been transferred to Mission Rabies, which is carrying out rabies vaccination efforts in India and other regions.

ANIMAL HEALTH

PROTECTING ANIMAL HEALTH

Our Animal Health business tackles the world's biggest animal health challenges, and collaborates with our customers to answer their specific needs.

These challenges include not only new and re-emerging diseases, but also how to respond to consumer preferences and how to make optimal use of the available tools to achieve the maximal response in efficacy, while at the same time achieving maximal well-being and safety for the animals and persons applying the veterinary products.

The ready-to-use single injection of PORCILIS ® PCV M Hyo®, Europe's first single-shot vaccine to protect piglets from both porcine circovirus type 2 and *Mycoplasma hyopneumoniae* infections, reduces the number of vaccinations given to young piglets and provides adequate protection against both diseases. Additionally, this combination vaccine does not require mixing and reduces the potential for handling error, while also resulting in less stress for the animals and the people that care for them.

Our company invests in the future of the veterinary profession by supporting research, education and specialized skills training so that veterinarians will have the resources they need to provide the best health care possible for the animals they treat.

The IDAL® 2G vaccination device for pigs, our second generation of needle-free vaccine delivery system, allows for additional vaccination options in pigs, providing flexibility for the user, particularly when vaccinating large groups of pigs. The IDAL 2G reduces stress on pigs, which can improve animal welfare, while the absence of needles positively impacts biosecurity due to prevention of disease transmission and food safety and workers´ safety. Additionally, the device can send vaccination data directly to a tablet or smart phone, allowing users to monitor, analyze and manage relevant data contained within the vaccinator. Swine producers will now have access to intradermal needle-free protection against PCV2, *Mycoplasma hyopneumoniae* (M. hyo) and porcine reproductive and respiratory syndrome virus (PRRSv), the three major swine diseases affecting pig operations worldwide, and against Aujeszky's disease (pseudorabies).

The Convenience Program Evaluation, an innovative new poultry health field service, is a new addition to our company's Convenience Program, an initiative designed to help poultry producers protect chickens against various diseases while achieving optimal vaccination standards, bird quality and performance goals. The Convenience Program Evaluation is designed to help producers troubleshoot disease outbreaks, optimize vaccination processes, and maintain the health of their poultry through the use of innovative and practical tools available via mobile devices and tool kits.

KEEPING PETS HEALTHY

Pets play an increasingly significant role in many families, and their health and quality of life are important. In 2015 we launched "Are You Missing the Signs?" This new global awareness campaign is designed to help cat owners recognize the signs of feline hyperthyroidism and to determine whether their cat may be at risk for the fatal disease. Recent studies have shown that veterinarians believe that hyperthyroidism in cats is underdiagnosed because pet owners haven't been able to recognize the signs associated with the disease or may mistake changes in their cats as regular aspects of growing older. Veterinarians believe it is important to help cat owners recognize the condition. The campaign features an interactive risk-assessment quiz that asks cat owners simple questions about their cat's body condition and behavior to help them determine whether they should consult their veterinarian to test their cat for feline hyperthyroidism.

INVESTING IN VETERINARY EDUCATION AND CONTINUED PROFESSIONAL VETERINARY DEVELOPMENT

Our company invests in the future of the veterinary profession by supporting research, education and specialized skills training so that veterinarians will have the resources they need to provide the best health care possible for the animals they treat. Throughout 2015, with funding from our company's Foundation, our Animal Health business provided a total of $300,000 in grants to veterinary students, allocated as follows:

- A $100,000 grant to the American Association of Bovine Practitioners (AABP) for 15 scholarships to veterinary students at U.S., Canadian or Caribbean veterinary schools
- A $185,000 grant to the American Veterinary Medical Foundation (AVMF) for 20 scholarships to veterinary students at U.S., Canadian or Caribbean veterinary schools, equally split between students with companion animal/equine interests and those with food animal/aquaculture/poultry interests, and for 14 international veterinary student scholarships with the focus on Latin/South America and SE Asia
- A $15,000 grant to the Food Systems Fellowship Program of Michigan State University College of Veterinary Medicine (MSU:FSF) to provide scholarships to three veterinary medicine students
- We also continued our contribution of €10,000 to the Gustav Rosenberger Memorial Fund. This fund provides annual grants to young and promising veterinarians who come from countries where bovine medicine needs further development and who intend to apply the knowledge obtained in those countries.
- Additionally, several national initiatives to support the education of veterinary students have been continued, such as in Canada and the UK

PROFESSIONAL DEVELOPMENT

- With a $100,000 grant to the University of Georgia, College of Veterinary Medicine, we were able to provide educational support to a student attending the college's Poultry Diagnostic and Research Center (PDRC)
- In 2014 we launched the Dairy Care365™ Initiative, a program to educate U.S. dairy farm workers in best practices for handling and managing dairy cattle. In the first year of the program the Dairy Care365™ team had conducted more than 35 workshops in 19 states, reaching the owners or veterinary caregivers of 25 percent of the U.S.'s lactating dairy cows.
- In 2014 we launched the CreatingConnections™ Educational Series, underlining the critical role of stockmanship for the health and well-being of cattle and, ultimately, the success of an operation. In 2015, the second module became available, featuring leading cattle-handling experts who provide valuable insights into achieving excellent feedlot stockmanship. Broken up into seven video lessons, the series features experts explaining cattle behavior and natural instincts, as well as providing step-by-step guidance on how to build the animal's trust and reduce anxiety.
- We also sponsor fish-vaccination training to fish producers and veterinarians

Performance	2013	2014	2015
Scholarships provided to students through our Animal Health Grant Program	NR	38	52

NR: Not reported.

ANIMAL HEALTH

CONTRIBUTING TO PUBLIC HEALTH

We provide a range of vaccines and treatments to keep livestock healthy to help ensure a stable food supply and help control organisms that can ultimately affect the health of people.

Global trade, global migration and climate change are increasing the spread of highly infectious diseases, such as foot-and-mouth disease, swine fever and peste des petits ruminants, and zoonotic diseases—such as avian flu. Highly infectious diseases have a direct impact on food production and the livelihood of farming families, whose income is dependent on the productivity and survival of their animals. A fast, flexible approach to vaccination can help control such diseases in the animal reservoir, reduce the likelihood of spread to humans and minimize the medical, social and economic impact that could occur if left unchecked.

SALMONELLA

Food-borne microbial bacteria, such as salmonella, are also a growing concern, particularly for poultry farmers. Human consumption of poultry or eggs infected with the bacteria can result in severe illness, pushing governments and industry to implement adequate measures to reduce this risk. We have developed a Food Safety Platform for poultry farmers that includes several salmonella vaccines and services that ensure effective, timely intervention if an outbreak occurs among poultry. Through the unique Convenience Program Evaluation, our Animal Health business helps poultry producers to identify critical food-safety hazard points and to be prepared to respond quickly and effectively. This combination of vaccines, biosecurity and other measures has contributed significantly to the reduction in incidence of human salmonellosis.

LEISHMANIASIS

Our Animal Health canine preventive product protects dogs against sandfly-borne leishmaniasis, helping to control one of the world's deadliest parasitic diseases in the animal reservoir, linked to 60,000 human deaths annually.

Our products help to minimize the annual deaths from animal diseases: 60,000 from leishmaniasis, and 55,000 from rabies.

RABIES

Rabies, a fatal neurological disease, is widespread throughout Africa, with more than 25,000 people—mostly children—dying from the disease each year after being bitten by a domestic dog, the main carrier of the disease. Globally, the disease kills an estimated 55,000 people annually.

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Our Animal Health business has a history in rabies control. As dogs are the source of the vast majority of human rabies deaths (accounting for up to 99 percent of all rabies transmissions to humans), rabies elimination is feasible by vaccinating dogs.

In 1997, our Animal Health business began supporting the Afya Serengeti Initiative in the Serengeti region of Tanzania by donating canine rabies vaccines. We also provided tools such as all-terrain vehicles and tents to help make sure the project was able to reach the most remote corners of the region. In 2011, the project was extended to the Kenyan villages bordering the Serengeti National Park, resulting in an unbroken vaccination circle around the Serengeti Park. Rabies in humans and domestic animals has now been virtually eliminated from this area, and we have also seen resurgence in the African wild dog population in the Serengeti. This species is categorized as endangered, and as a direct result of the efforts to manage disease the population of these animals is on the rise.

The success of the Afya Serengeti Project inspired us in 2013 to extend our support to the newly founded Mission Rabies project. Mission Rabies focuses on addressing the need for vaccination and education in rabies hotspots in Asia and Africa. The first vaccination campaign took place in targeted locations in India, followed by expansion of the initiative to other parts of India, and to areas of Africa including Malawi. The geography covered by Mission Rabies continues to grow annually, as does the number of doses that we donate to both the Afya Serengeti Initiative and to Mission Rabies. We are proud of our involvement in these initiatives and in their role toward the global goal of eradicating rabies by 2030.

ANIMAL HEALTH

SUPPORTING A SUSTAINABLE FOOD SUPPLY

By 2050, the United Nations estimates there will be an additional 2 billion people in the world. To feed them, we will need to help animal producers become more efficient and more sustainable.

Animal diseases cost farmers a significant proportion of their meat, fish and dairy yield every year. In fact, the World Organization for Animal Health estimates that animal disease reduces global food production by at least 20 percent.[1] Its impact on food output is greatest in developing countries, where two-thirds of the world's 1.5 billion poor are reliant on livestock as their main source of food and income.[2] Preventing disease-related costs will also be crucial if we are to meet the increasing demand for animal protein, created by rising standards of living and population growth. In addition, the land and water available for agriculture is decreasing. Not only will food-producing animals have to stay healthy, but they will also have to be reared more efficiently.

As economies continue to grow and lifestyles change around the globe, the global appetite for meat, milk and eggs increases. In fact, the UN Food and Agriculture Organization (FAO) expects the global demand for animal protein to double by 2050.

Our portfolio of animal health products and services is focused on helping farmers keep their livestock healthy and productive. Targeted intervention with vaccines, antiparasitics, anti-infectives and other veterinary medicines and services helps protect the health and well-being of animals, and helps producers to avoid and/or limit their production losses.

PROTECTING POULTRY FLOCKS AND ENSURING THE LIVELIHOOD OF FARMERS

Through the introduction of a vaccine against a specific virus strain causing infectious bronchitis (IB) in chickens, farmers in Argentina recognized significant reduction of mortality in their chicken flocks and improved productivity. Often, a tailored approach can offer important additional features to protect against devastating diseases such as infectious laryngotracheitis and Newcastle Disease in chickens. For example, our innovative vector-vaccine concept was introduced a few years ago in response to emerging poultry diseases that were first identified in South America.

The World Organization for Animal Health estimates that animal disease reduces global food production by at least 20 percent.

Another innovation is our SPHEREON® technology, which freeze-dries poultry vaccines into small, highly soluble particles (spheres) instead of the traditional vaccine cake in a glass bottle. SPHEREON vaccines are packaged in lightweight, easy-to-open aluminum cups in convenient dose sizes. Dissolving the particles is fast and convenient for administration of the vaccine via water, spray or eye drop.

Currently, half of all the fish consumed globally is farmed (proceedings of the National Academy of Sciences (PNAS)).

Demand for fish is also rising, and farmed fish are becoming more important. In order to meet this demand and protect wild fish, our SLICE® Sustainability Project, developed in partnership with fish farmers, continues to help control parasites and keep fish healthy. SLICE (emamectin benzoate) controls sea lice, the naturally occurring parasites that live in the ocean and threaten the health and welfare of salmon. Our “Strep Control—Your Tilapia Health” program helps fish farmers to identify the strain and biotype of *Streptococcus agalactiae* present on their farm, implement a surveillance and vaccination program, and train staff on appropriate control strategies against the most prevalent disease affecting tilapia. In 2014, this program delivered a new fish vaccine to protect tilapia and other fish against the biotype 1 strain of *Streptococcus agalactiae*, the biotype specific to Thailand and other key tilapia-producing regions in Asia, including Malaysia.

[1] http://www.oie.int/for-the-media/editorials/detail/article/feeding-the-world-better-by-controlling-animal-diseases/
[2] OIE, B. Vallat. Opening speech, European Veterinary Week, Brussels, Nov. 10, 2008.

ANIMAL HEALTH

ENSURING ETHICAL BUSINESS PRACTICES

We invest millions of dollars each year in the research and development of novel animal health products and the continued investigation of existing products.

As with our human health pharmaceuticals and vaccines, we test our investigative animal health medicines and vaccines vigorously for safety, quality and efficacy before submitting them for approval after thorough review by independent regulatory authorities.

The authorization standards for veterinary medicines are at the same level as those for human medicines. On average, it takes five to twelve years to bring a veterinary product to market. A science-based, predictable regulatory environment is one of the key conditions necessary for innovation and for providing our customers with high-quality products. We support global harmonization of the regulatory process for veterinary medicines through participation in and dialogue with the International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products (VICH) and the Codex Alimentarius.

On average, it takes 5 to 12 years to bring a veterinary product to market.

The approval process for medicines and vaccines used in farm animals also establishes withdrawal periods, from the time the last dose of product is given until the animals or their products enter the food chain. These withdrawal periods ensure the safety of human consumption of meat, milk and eggs from medicine- and vaccine-treated animals.

Our submissions to regulatory agencies also include an environmental assessment that appraises the effects of the use of our products on flora, fauna, soil and water. When necessary, restrictions are placed on the use of our products to protect the environment.

Once a product is on the market, we monitor all aspects that could affect product safety. Findings are assessed and reported, as appropriate, to regulatory authorities and addressed through appropriate measures.

STRUCTURED HERD HEALTH MANAGEMENT

The most effective means of preventing the development and spread of antimicrobial resistance is to reduce the need for antimicrobial treatment. The key is disease prevention, which can be aided by vaccination. In a number of countries, we support veterinarians with our ResCalf and ResPig programs to develop a structured approach to improving lung health and preventing bovine respiratory disease in calves and respiratory diseases in pigs. Respiratory disease can seriously affect the health of cattle and pigs and lead to economic losses. With monitoring and high-quality technical support and advice, combined with vaccination, early in 2014 we introduced Once PMH® IN in the U.S., the only intranasal vaccine to deliver dual bacterial pneumonia protection in healthy beef and dairy cattle, including calves as young as 1 week old. We also received approval for PORCILIS® PCV M Hyo vaccine, the first ready-to-use single-injection combination vaccine to protect piglets against porcine circovirus and *Mycoplasma hyopneumoniae* infections during the fattening period. By bringing vaccines like these to the market, we help to control these disease complexes and reduce the need to use antibiotics to treat sick animals.

MAKING A DIFFERENCE IN WIDER SOCIETAL NEEDS

Our Animal Health business uses our experience, resources and science to help our partners keep animals healthy, ensure a sustainable food supply, protect public health, and help people and pets enjoy their lives together. We are committed to making a difference in the health and welfare of animals and in wider societal needs.

ACCESS TO VETERINARY EXPERTISE

Access to veterinary expertise and medicines significantly impacts the livelihoods of small landholders and their families.

Milk for Malawi—Through our partnership with Shire Highlands Milk Producers Association (SHMPA), our Animal Health business lends financial and in-kind support to Malawian dairy farmers to improve the quality and quantity of milk supplies. Early in 2015, a shipment of NILZAN® boluses arrived in Malawi shortly after the storm period, and was used by smallholders on their young stock. These boluses themselves are another piece of appropriate technology for smallholders, as they come in a very convenient form allowing for simple and accurate mixing with a calf's feed. Producing plenty of calves is a high priority for smallholder farmers keeping only one or two cows. At the moment, the sale of a healthy, pregnant heifer can pay for a good house. The local dairy companies have been expanding their capacity threefold in the last decade. Last year, SHMPA producers saw their first price increase in nearly four years, and production immediately jumped.

Enhancing the poultry value chain in Ethiopia and Myanmar—In 2012, our global poultry business entered into a joint project with the Dutch consortium Holland Africa Poultry Partners (HAPP). This project was established to improve knowledge of poultry health and vaccines for the developing Ethiopian poultry industry. The project has gathered momentum over these years and came to its projected close in June 2015 with the official opening of the National Poultry Training Centre in Bishoftu, Ethiopia. Later in 2015, our global Poultry business unit continued its corporate responsibility activities by joining the public-private partnership Netherlands Myanmar Poultry Cooperation, to strengthen the poultry sector in Myanmar by transferring knowledge (e.g., providing training programs) and demonstrating best practices.

Joining forces for Bamboutos-Menoua Pig Holders—The Bamboutos-Menoua Smallholder Integrated Pig Project in Cameroon, under the coordination of Heifer International, aims to improve the livelihood of 1,500 resource-poor project participants, as well as their direct dependents, by helping them increase their income, improve gender relations, improve mobilization of group resources, and mitigate the effects of HIV/AIDS in sustainable ways. Our Swine business supports the animal health–related components, among others, with veterinary medicines and expertise. In 2015, this five-year project reached its projected end. Following the completion of required training and the building of necessary housing facilities, more than 1,600 families received young pigs to start a farm. The benefit to the participating families has been substantial. Their average monthly income increased by 60 percent. Sales of pigs contributed significantly, and the use of the pig´s manure, together with better seed material and growing techniques, resulted in a threefold increase in the harvests of corn, peppers and beans. By the end of the project, 520 women held leadership roles (compared to 160 at the start); 90 out of 93 groups started saving money and cooperating with the other groups; and the targets to mitigate the economic effects of HIV/AIDS were achieved.

OVERVIEW

ENVIRONMENTAL SUSTAINABILITY

A healthy planet is essential to human health and the sustainability of our business.

Material topics: Climate and Energy, Ecosystem Impacts / Use of Natural Substances, Green Chemistry, Non-GHGs, Packaging, Pharmaceuticals in the Environment, Waste Management, Water Use and Management

SETTING GOALS TO BETTER MANAGE OUR ENERGY, WATER AND WASTE

We have established three environmental sustainability goals related to climate change, water and waste that are aligned with our business and focused on addressing key environmental challenges. Achieving these goals helps prepare us to operate amidst an increasing global demand for energy, clean water and other natural resources.

LEARN MORE

TAKING A HOLISTIC APPROACH TO MANAGING SHARED WATER RESOURCES

Our facilities, suppliers, and the communities in which we operate all need access to clean water. We are focused on ensuring that our wastewater discharges comply with local and national standards; on reducing our operational water footprint; on publicly reporting our water use and goals; and on advocating for effective water policy.

LEARN MORE

MINIMIZING OUR PRODUCTS' ENVIRONMENTAL FOOTPRINT—FROM THE LAB TO THE MEDICINE CABINET

We are committed to understanding and managing the environmental impacts of our products throughout their life cycles—from discovery through manufacturing, use and disposal. We conduct environmental risk assessments on our products to understand and manage impacts from development, product manufacturing, and patient use.

LEARN MORE

ENVIRONMENTAL SUSTAINABILITY AT-A-GLANCE

Learn about our environmental sustainability goals

ENERGY STAR AWARD 2016
PARTNER OF THE YEAR

CDP™ CLIMATE DISCLOSURE LEADER 2015

ENVIRONMENTAL SUSTAINABILITY AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our Environmental Sustainability efforts. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

Key Performance Indicators[1,2]

	2011	2012	2013	2014	2015
Greenhouse gas emissions (metric tons of CO_2e – Scopes 1 & 2)	1,951,000	1,872,000	1,772,000	1,643,000	1,453,000
Water usage (billions of gallons)	8.6	8.6	7.5	7.1	6.3
Operational waste generated (metric tons)	108,500	109,500	96,300	83,700	70,200

[1] Includes facilities worldwide.
[2] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired and sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.

CLIMATE & ENERGY

Scientific data support that climate change is occurring. We are taking action to address potential economic and public health risks associated with a changing climate, in part by reducing our demand for energy.

MATERIALS & WASTE

The proper management of outputs from our facilities leads us to look for opportunities to avoid the use of hazardous materials, reuse or recycle materials, and prevent the generation of waste.

PRODUCT STEWARDSHIP

We focus on identifying and either preventing or minimizing safety and environmental hazards throughout a product's life cycle. We conduct extensive testing of our products to understand these risks.

FOR MORE INFORMATION ON ENVIRONMENTAL SUSTAINABILITY

LEARN MORE

ENVIRONMENTAL SUSTAINABILITY

OUR APPROACH TO ENVIRONMENTAL SUSTAINABILITY

Our company has a long history of environmental stewardship and compliance, but we realize that our strategy and efforts need to evolve in order for us to operate in an increasingly resource-constrained world.

We have focused our environmental sustainability strategy on improving the efficiency of our operations, designing for the environment, and reducing the impacts and risks in our value chain. To achieve our goals, we have defined environmental-footprint measures and established a set of goals to improve the sustainability of our operations

SUSTAINABILITY STRATEGY

We recognize that climate change could significantly impact global health and present long-term risks to our business. The world's resources are limited, and over the next few decades the demand for energy, clean water and natural resources will increase substantially due to population growth and economic development. We understand that business has a responsibility to use resources wisely and drive innovations that will enable global development while protecting and preserving the planet.

Our Environmental Sustainability Strategy focuses on three main areas:

EFFICIENT OPERATIONS

Reducing our environmental impacts through energy efficiency and water-use-reduction initiatives, as well as efficiently using raw materials and handling our wastes.

DESIGN FOR ENVIRONMENT

Innovating to reduce the environmental impacts of our new products and packaging through the use of green chemistry,

life cycle assessments, and other sustainable design principles.

REDUCE RISKS IN VALUE CHAIN

Understanding the environmental impacts and risks that are upstream and downstream of our own operations, and working to minimize those impacts. This is done through collaboration with our suppliers and customers to address our shared needs and interests in more efficient and environmentally beneficial ways.

GRI G4-14

PRECAUTIONARY PRINCIPLE

We take a precautionary approach when evaluating potential human exposures and environmental impacts from our manufacturing processes. Conservative assumptions are made when data are limited and safety factors are added to address uncertainty and variability in our assessments.

This type of approach is particularly relevant to our work in toxicology, industrial hygiene, and environmental protection:

- We assign hazard ratings to all of our chemical compounds, and default to more conservative exposure limits when we have limited health hazard information. Most often, our initial assignment can be relaxed as preclinical and clinical data become available.
- Our Industrial Hygiene Risk Assessments require that the effectiveness of engineering controls be verified, and that exposure monitoring be conducted as necessary to ensure appropriate levels of employee protection. We evaluate exposure monitoring data based on statistical analysis and not just individual point-by-point comparisons to Occupational Exposure Limits.
- We set a *de minimis* level for environmental releases at very low levels until we have sufficient data to understand any impacts on aquatic organisms. Aquatic testing is typically completed late in the product development timeline, and limits can change once data is available.

Our company has established three environmental sustainability goals that are fully aligned with our business and focus on key global environmental challenges.

Our environmental goals support our business strategy by helping us to drive down our costs, improve our operating efficiencies and reduce our risk. Achieving these goals also helps prepare us to operate in a world where there will be increased demand for energy, clean water and natural resources.

WATER

TARGET[1]

Driving down our water use 25% by 2020 versus a 2009 baseline

2015 PROGRESS

29% reduction since 2009

CLIMATE

TARGET[1]

Reducing our emissions of greenhouse gases 15% by 2020 versus a 2012 baseline

2015 PROGRESS

22% reduction since 2012

WASTE

TARGET[1]

Continuing to send less than 30% (by weight) of our operational waste to landfills and incinerators through 2017

2015 PROGRESS

28% of operational waste sent to landfill and incinerators without energy recovery

[1] The baseline year of 2009 for water use was originally set in 2010, and was retained when the environmental goals were updated in 2014. The baseline year of 2012 for greenhouse gas (GHG) emissions was established in 2014 after the previous GHG goal was achieved early.

By the end of 2015, we attained all three of our Environmental Goals ahead of schedule. The water, climate and waste sections of this report provide information on how these results were achieved. While we are proud of this progress, we know we can make additional reductions in our environmental footprint. Efforts are underway to establish a new set of goals that will drive continued improvements, protect the environment and minimize our use of natural resources.

GLOBAL WATER USE

GLOBAL DIRECT GHG EMISSIONS

SCOPE 1 & 2 (thousands of MT CO_2e)

GLOBAL OPERATIONAL WASTE

(% to landfill & incineration without energy recovery)

ENVIRONMENTAL SUSTAINABILITY

EHS MANAGEMENT & COMPLIANCE

MAIN

Protecting our people, our communities and the environment is fundamentally important to the way our company operates.

Our mission and values are articulated by our company Code of Conduct, *Our Values and Standards*, which serves as a vehicle to communicate them to all of our employees. We also communicate Environmental Health and Safety (EHS) expectations to our suppliers through our *Business Partner Code of Conduct*, which outlines the EHS requirements for the firms with which we do business. Our EHS values and commitments are further detailed in our corporate policy, Respect for Environmental, Health and Safety. In addition to compliance with all applicable country, regional and local safety and environmental laws, we strive for EHS performance that is among the best in the pharmaceutical industry.

As our EHS Policy states, we:

- Maintain a safe and healthy working environment for all employees, contractors and guests
- Foster a culture of EHS excellence that is built on integrity, accountability, collaboration and active employee participation, and seek to continuously improve our systems, processes and standards in further support of that culture
- Investigate and implement approaches to reduce the resources we use during the design, development and manufacturing of our products and delivery of commercial services, so as to minimize our impact on the environment
- Understand the potential hazards associated with our products and take action to reduce any potential risks or adverse impacts
- Promote EHS excellence in our supply chain and expect third parties doing work on our behalf to do the same. We enter into business relationships with partners that share our commitment to responsible EHS stewardship

Our EHS Management System is based on the “Plan, Do, Check, Act” model, which allows us to assess and continually improve our practices over time. The model is implemented through a set of interwoven business processes that span the corporation:

- The planning process includes development of goals, objectives and metrics based on a review of company performance, EHS programs, applicable regulations and other external factors [PLAN]
- Activities are informed by Standards, Guidelines and Tools, which are integrated into the EHS Management System, and include specific expectations for sites and operating organizations [DO]
- Governance committees, from the executive-level EHS Council through site-compliance committees, review performance and progress against objectives. Central audits and self-assessments raise issues, and our monthly

and annual performance metrics reflect our progress [CHECK]
- Corrective actions and continuous-improvement initiatives are established to resolve EHS concerns that are surfaced during performance reviews, assessments, audits and routine surveillance of the regulatory landscape [ACT]

TRAINING

Training is critical to building worldwide employee competencies that will improve compliance, reduce risks and drive continuous improvement.

GRI G4-LA9

We have a global standard that defines the Environmental Health & Safety (EHS) training expectations for employees in of three categories:

- **Managers**—covers specific management responsibilities with regard to safety and environmental compliance and promoting a “safety first” culture
- **EHS professionals**—designed to drive and expand technical expertise and improved EHS capabilities around the world
- **Overall employee population**—covers the specific information our employees need to perform their jobs in a safe and environmentally compliant manner, focusing on hazards and control measures employees encounter on the job

These training programs are reviewed periodically to ensure they remain current. Our EHS training program materials are available in both instructor-led as well as e-learning formats. A mandatory course for all senior company leaders highlights the importance of EHS to the business, the critical role senior leaders play in EHS performance, and the specific actions our leaders can take to drive their areas of accountability toward EHS excellence.

EHS GOVERNANCE

Our commitment to the environment and employee health and safety begins with the company’s Executive Committee, which has established the corporate Environmental, Health & Safety (EHS) Council.

This council, composed of senior-level executives from all business units, is responsible for overall EHS governance as well as leading and driving enterprise-wide excellence in EHS management and performance.

The Council’s responsibilities include:

- Establishing EHS strategy, policy and standards
- Providing company-wide oversight of environmental and employee safety issues, risk mitigation and control strategies
- Monitoring performance, establishing continuous-improvement targets, and recognizing and promoting excellence
- Allocating resources and/or sponsoring projects to address specific concerns

An EHS Standards Committee chartered by the Council provides stewardship over the Standards and enables business engagement in the development of new or revised Standards. Each area of the business is responsible for executing against the Standards, contributing to development of programs, supporting internal audits and communicating significant EHS events. Divisional compliance committees have been established to provide governance on the implementation of the Standards and for other EHS matters. The vice president (VP) of Global Safety and the Environment (GSE) is responsible for communicating to the Board of Directors, the Executive Committee and EHS Council regarding progress on goals, objectives and metrics, as well as other material issues. The VP of GSE partners with business leaders to establish long- and short-term goals and performance metrics to drive EHS excellence.

Our corporate EHS organization is responsible for:

- Developing corporate policies, procedures, guidelines, standards, tools and programs to set expectations and to support EHS compliance
- Providing technical and regulatory support to site-based safety and environmental staff and operating organizations
- Managing and implementing an internal audit program targeted at understanding the current state of compliance and identifying potential issues
- Tracking and communicating internal and external trends that should be addressed
- Anticipating, tracking and commenting on new regulations affecting our business and, where appropriate, developing plans to address them

Our site-based safety and environmental professionals around the world support the EHS needs of their business areas, which include manufacturing, research operations, sales and administrative activities, by:

- Ensuring that line management fully understands EHS requirements, including applicable regulations, permit requirements and company EHS Standards
- Establishing, assessing and improving programs
- Providing regulatory and technical support to employees and the operating areas
- Routinely assessing performance against both regulatory and company requirements
- Acting as the primary liaison with local regulators and inspectors
- Investigating incidents and developing corrective action plans to address identified root causes

INTERNAL AUDITING

We have a detailed and rigorous internal corporate safety and environmental audit program.

Our global corporate Environmental Health & Safety (EHS) Audit Program is one way in which we identify and resolve compliance and performance issues.

- Our audit leaders are full-time professional auditors with extensive experience in auditing a broad range of EHS programs applicable to the company. Audit team members consist of EHS professionals with extensive site and subject-matter expertise. In many cases, particularly outside of the United States, our internal auditors work with independent consultants who have regulatory expertise in the laws of the host country.
- All audit findings are addressed through the development of corrective and preventative action plans, which are reviewed, approved by the audit leader and regional GSE leader, and tracked to completion
- Findings from our audit program are communicated to appropriate parts of the organization so that learnings may be shared and actions can be taken
- Audit performance and key program metrics are reviewed as part of our governance process

EHS audits of our facilities covered 55% of our

manufacturing and research locations in 2015.

The audit frequency for a given facility is primarily risk based. Manufacturing and research sites are generally audited every one to two years, depending on the type of facility, its size and other factors. Less complex facilities, such as sales and business offices and our warehouses, are typically audited every five years. In 2015, we performed 42 corporate EHS audits of our facilities, covering 55 percent of our manufacturing and research locations, and involving 605 auditor days of on-site review activities.

In addition to our corporate EHS audit program, our sites regularly perform self-inspections, and annually complete self assessments of selected regulatory requirements and company standards, with all programs being self assessed at least once every three years.

REMEDIATION

Environmental management practices have evolved significantly over the past 30 years.

GRI G4-EN29

With research and manufacturing operations dating back more than 100 years, some of our facilities operated at a time when there were few regulations and little understanding of good environmental practices. Because our company has responsibility for remediation of these sites, we have launched investigations, developed science-based remediation plans and implemented cleanup projects to protect the health and safety of our neighbors, communities, employees and the environment, and comply with all applicable requirements.

For remediation and environmental liabilities, including at formerly owned and operated sites, we spent $12 million in 2014 and $8 million in 2015. Our company has an Environmental Liability reserve of approximately $100 million to fund the continued remediation of these sites now and into the future. In addition, we are a potentially responsible party at 19 multiparty Superfund sites in the United States.

PERFORMANCE

Our centralized environmental, health & safety (EHS) information system allows us to collect, manage, learn from and share our safety and environmental performance data more efficiently.

We collect and analyze data reflecting both leading and lagging metrics to look for potential trends and identify opportunities that could help drive performance improvement. We continuously explore new ways to learn from and report on our performance.

GRI G4-EN29

GRI G4-SO8

Global Environmental & Safety Compliance Summary[1]

Notices of Violations (NOV) / Citations	2011	2012	2013	2014	2015
Environmental	22	11	7	16	16
Safety	20	31	9	11	2
Fines					
Environmental fines paid	$1,531,765	$12,100	$1,167	$81,600	$157,270
Number of environmental fines	14	1	1	4	7
Safety fines paid	$7,500	$121,827	$3,827	$1,000	$0
Number of safety fines	2	2	2	1	0

[1] Previously reported data have been restated for consistency with Global Reporting Initiative (GRI) guidelines.

NOTICES OF VIOLATIONS, FINES & SETTLEMENTS

We report all forms of EHS compliance notices using the term Notices of Violations (NOVs), which includes citations, letters of warning and notices of noncompliance from environmental and safety-focused regulatory agencies.

In 2015, we had 183 EHS-related inspections of our facilities around the world. We received two safety NOVs and no safety-related fines in 2015. We received 16 environmental NOVs and paid $157,270 in fines associated with seven environmental incidents in 2015. Over the last five years, the number of NOVs and fines received by our company has been trending downward, and in 2015, we saw a significant decrease in the number of safety-related NOVs over the prior year.

SIGNIFICANT ENVIRONMENTAL EVENTS

GRI G4-EN24

A “significant environmental event” is defined as an environmental release that results in environmental harm to humans, aquatic organisms or wildlife, or any environmental release that requires reporting to the U.S. Securities and Exchange Commission. We experienced no significant environmental events in 2015.

ENVIRONMENTAL SUSTAINABILITY

CLIMATE CHANGE & ENERGY USE

MAIN

Scientific data support that climate change is occurring, and we are taking action to reduce the future economic and public health risks associated with a changing climate.

GRI G4-EC2

We have made it a priority to reduce our demand for energy, and have taken steps to establish responsible internal policies and practices focused on reducing energy use at all sites and greenhouse gas (GHG) generation throughout the company. By taking these steps, we are not only minimizing GHG emissions but also reducing our operating costs and mitigating the business impacts expected to be associated with future climate change requirements.

CDP™ CLIMATE DISCLOSURE LEADER 2015

We report our GHG emissions as required by regulations in certain countries and annually through CDP (formerly Carbon Disclosure Project). Our CDP score for carbon reporting has improved each year since 2008, when CDP scoring began. The report we submitted to CDP in 2015, which reflected our 2014 performance data, received a score of 99B. The number 99 is a reflection of our disclosure on a scale of 0 to 100, with 100 being the highest. The letter B is a reflection of our performance on a scale of A to E, with A being the highest.

In 2015, we were identified as a U.S. leader for the quality of climate change information we disclosed to investors and the global marketplace, and were awarded a position on CDP's S&P Climate Disclosure Leadership Index (CDLI). Those organizations graded within the top 10 percent of CDP reporting entities constitute the CDLI.

NOTE: Scope 2 Market-based value is 638,400 metrics tons CO_2e in accordance with the Greenhouse Gas Protocol.

To see all of our Scope 1, 2 and 3 GHG data, click here.

We track the generation of five GHGs associated with operating our facilities and our fleet:

- Carbon dioxide (CO_2)
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Sulfur hexafluoride

We have established and met several GHG-reduction goals over the last decade. Our original goals of achieving a 15 percent absolute reduction of our Scope 1 and 2 GHG emissions between 2012 and 2020 was met and exceeded in 2015, with a reduction of 22 percent.

Energy-efficiency and demand-reduction projects at multiple sites contributed to lowering our energy consumption and reducing our direct GHG emissions. The most significant contributors to decreasing our GHG emissions were demand reduction/conservation; consolidation of our office, lab and manufacturing spaces; and the shifting of some power supplies from purchased electricity to electricity generated on-site through combined heat and power systems.

INITATIVES

Our company has launched initiatives around the world to improve energy use, reduce greenhouse gas (GHG) emissions from our operations and understand our supply chain–related impacts.

Our Energy Center of Excellence (CoE) identifies, shares and standardizes best practices, and prioritizes the funding of energy projects to reduce energy usage across the company. While we have implemented some renewable-energy projects, our program emphasizes energy efficiency and conservation, because using less energy provides a better balance of business needs and environmental impact reduction. Our manufacturing facilities, warehouses, laboratories, major offices and vehicle fleet are the primary targets of our energy-demand-reduction programs, as they represent the majority of our energy consumption.

We have established an Energy Capital Fund of up to $10 million per year in order to transition to more energy-efficient technology and to better position the company to respond to energy demands in the future. In 2015, we spent $8 million on projects, that resulted in $3.4 million in annual savings and a reduction of more than 13,700 metric tons of carbon dioxide from our facilities.

GRI G4-EN6

FACILITIES

We strive to make our facilities as energy efficient as practical.

- When we purchase facilities, we evaluate them for energy efficiency and assess them against our best practices as part of their integration into our company
- We require all new facilities to comply with our Energy Design Guide and Energy Conservation Planner
- We build all new laboratories and offices following cost-effective energy-efficient practices. We have several facilities that are LEED-certified
- In November 2015, our China Head Office was certified as a LEED Gold Project

Since 2010, we have conducted “Energy Treasure Hunts” at 13 of our facilities around the world. During these events, participants spend three days looking for opportunities to reduce demand for both energy and water. This process has identified over 1,000 energy-efficient project opportunities, many of which have been successfully implemented.

- In 2015, we conducted two formal Energy Treasure Hunts at facilities in Spain and Singapore. During the Singapore event, we identified optimization opportunities for a chiller system that could reduce energy use by 14 gigawatt-hours of energy per year.
- The Spain event identified opportunities to upgrade the process water system by adding variable-frequency drive pumps and reducing temperature set points, both of which generated savings in electricity, steam and chilled water.
- One of our facilities in the Netherlands was inspired by the United Nations Climate Change Conference in Paris to conduct a “mini” treasure hunt event in December 2015. The treasure hunt uncovered “quick wins” including repairing missing insulation, turning off lighting in unoccupied work areas, and updating equipment maintenance schedules.
- The Energy Center of Excellence hosts a “Treasure Hunt Online” to help generate energy-savings ideas that can be shared with all our sites

All of our employees have access to a training curriculum that allows them to learn more about energy management and energy systems. Through this program, employees can earn an energy manager certification.

WORK PRACTICES

Our company takes advantage of technology advances in order to save energy, time and money while also reducing emissions.

- Site energy use is tracked monthly by our Energy Center of Excellence (CoE) through a centralized system
- Employees are encouraged to make use of e-meetings whenever possible, as opposed to traveling for business
- A “Rail Travel” option is included in our online business-travel booking tool to make it easier to travel by train when appropriate. Traveling by train has a smaller carbon footprint than traveling by either airplane or personal vehicle
- The carriers who transport our products use alternatives to air freight whenever practical. In 2015, 52 percent (by weight) of our products were shipped by ocean freight, which reduces the amount of transportation-related GHG emissions by over 90 percent as compared to air shipping

RENEWABLE ENERGY

Photovoltaic (PV) arrays, wind turbines and other renewable-energy installations help reduce energy-demand peaks and postpone or avoid adding new power plants. We have several sites in Australia, Italy and the United States that host renewable installations.

One site in Pennsylvania has a combination green and solar-photovoltaic roof. In addition to generating approximately 25 megawatt hours (MWh) of electricity per year, the roof’s 9,000 square feet of green plants provide insulation to the building, extend the roof’s life by protecting it from ultraviolet (UV) light, and reduce the impacts of storm-water runoff by capturing 90 percent of rainwater.

While renewable energy accounts for a very small percentage of the electricity we consume (less than 1 percent), we have initiated an analysis of our U.S.-based sites to look for new installation and power-purchase contract opportunities.

VEHICLE FLEET

Approximately 10 percent of our GHG emissions are associated with our vehicle fleet. We calculate our fleet’s GHG emissions on the basis of estimated fuel economy and actual total miles driven.

- We have reduced our number of sales fleet vehicles on the road by over 2,000 vehicles since 2012.
- In an effort to improve fuel efficiency, we have converted our U.S. Human Health sales fleet from cars with six-cylinder engines to cars with four-cylinder engines, replaced eight-cylinder-engine trucks with six-cylinder-engine trucks, and introduced an all-wheel-drive (AWD) sedan option to replace AWD sport utility vehicles.
- Our European Union (EU) fleet continues to convert to the use of more fuel-efficient vehicles. We met the 2015 EU target of having a fleet average emission rate of 130g CO_2/km, and are on track to meet the EU target of 95g CO_2/km by 2020. In 2015, our EU average emission rate was 107g CO_2/km.

PARTNERSHIPS

We have a long-standing partnership with the U.S. Environmental Protection Agency’s (EPA) Energy Star program. This partnership provides a broad energy-management strategy that serves as a useful framework for measuring our current energy performance, setting goals, tracking savings and rewarding improvements. In April 2016, U.S. EPA again recognized our company with the Sustained Excellence Award. This is the 11th consecutive year in which we have been recognized by ENERGY STAR for excellence in energy management. We also received several facility-specific awards from EPA in 2016:

- Our Puerto Rico facility was awarded the ENERGY STAR Pharmaceutical Energy Performance Indicator Award by U.S. EPA for superior energy efficiency and environmental performance among U.S. pharmaceutical manufacturing plants
- Two office buildings in New Jersey and one in Pennsylvania earned ENERGY STAR Portfolio Manager Awards from U.S. EPA for being in the top quartile of their sector

In 2015, one of our facilities in Singapore received the Energy Efficiency National Partnership Award from the Singapore

National Environment Agency for excellence in energy management for the second consecutive year.

For more information on our awards, click here.

PERFORMANCE

GRI G4-EN6

GRI G4-EN15

GRI G4-EN16

GRI G4-EN17

GRI G4-EN19

Global Energy Use & GHG Summary[1]	2011	2012	2013	2014	2015
Total energy (GJ)	25,789,700	24,787,400	24,195,900	22,245,000	21,326,900
Total Scope 1 and 2 greenhouse gas (GHG) emissions (MT CO_2e)[2,3]	1,951,000	1,872,000	1,772,000	1,643,000	1,453,000
Total Scope 3 greenhouse gas (GHG) emissions (MT CO_2e)	N/A	N/A	N/A	5,760,000	5,261,700

N/A: Not available
Note: Scope 3 data prior to 2014 was limited to business travel only. See below for details.
[1] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired or sold. Adjustments also reflect changes in methodology to ensure consistency from year to year. [2] Reported using Scope 2 location-based value is 588,300 metric tons CO2e in 2015, in accordance with the Greenhouse Gas Protocol. [3] Scope 2 market-based value is 638,400 metric tons CO2e in 2015, in accordance with the Greenhouse Gas Protocol.

GRI G4-EN3

Energy by Source Scope 1 & 2 (% of total)[1]	2011	2012	2013	2014	2015
Natural gas (Scope 1)	58%	58%	59%	60%	60%
Purchased electricity (Scope 2)[2,3]	24%	25%	23%	24%	25%
Fleet fuel (Scope 1)	14%	13%	12%	11%	10%
Purchased steam (Scope 2)	2%	3%	4%	3%	3%
Fuel oil (Scope 1)	2%	1%	2%	2%	2%
Spent solvents (Scope 1)	0.2%	0.3%	0.1%	0.2%	0.1%
Coal (Scope 1)	0.0%	0.0%	0.0%	0.0%	0.0%

[1] May not add to 100 percent due to rounding. [2] Reported using Scope 2 location-based value in accordance with the Greenhouse Gas Protocol. [3] Includes solar, wind and other renewables generated on-site where renewable energy credits have been sold.

From 2014 to 2015, we made great strides and reduced our year-over-year Scope 1 and Scope 2 GHG emissions by 11 percent. While we are proud of our achievement in reaching our absolute GHG reduction goal early, we will continue our

emission reduction activities as we investigate and set new goal(s).

GRI G4-EN4

GRI G4-EN17

GRI G4-EN30

In an effort to continuously improve our climate change and energy-use disclosure, we have expanded our 2015 Scope 3 reporting. We have used primary data along with an economic input-output model based on our third-party spend data. Reductions in Scope 3 emissions from 2014 to 2015 resulted from reduced spend on goods and services as well as a reduction in fuel use and waste generation. Scope 3 categories that grew in 2015 were due to an increase employee business travel and an increase in the sales and use of our inhaler-based products, which contain propellants with global warming potential.

SCOPE 3 CATEGORY (MT CO_2E)

Scope 3 Category (MT CO_2e)	2011	2012	2013	2014	2015
Total Scope 3	137,200	127,000	310,100	5,760,000	5,261,700
Purchased goods and services[1, 2]	N/A	N/A	N/A	4,437,700	3,408,500
Capital goods[1,3]	N/A	N/A	N/A	N/A	474,000
GHG emissions from fuel and energy-related activities not included in Scope 1 & 2[2,4,5]	N/A	N/A	N/A	309,500	276,200
Upstream transportation and distribution[1,2]	N/A	N/A	N/A	258,000	241,700
Waste generated in operations (excluding recycled & composted waste)[2,5,6,7]	N/A	N/A	N/A	23,500	20,600
GHG emissions related to employee business travel[8,9]	137,200	127,000	123,200	182,600	283,300
Employee commuting[2]	N/A	N/A	N/A	320,700	302,400
GHG emissions from use of sold products[10,11]	N/A	N/A	186,900	228,000	255,000

Note: Limited Data Assurance was granted for emissions calculated from primary travel vendor data and employee reimbursable travel mileage data. The total reported here includes non-primary travel vendor data emissions which were based on our 2015 third party spend data and an Economic Input-Output Model performed by Climate Earth, Inc.

[1] Based on third-party spend data and an economic input-output model performed by Climate Earth, Inc.
[2] Data not available before 2014.
[3] Data not available before 2015.
[4] Emission factors from Argonne National Laboratory's GREET Model were used in conjunction with primary fuel and energy-use data.
[5] Data as reported historically, not baseline adjusted.
[6] Primary-waste data were used with the U.S. EPA's WARM Model.
[7] Including recycled and composted waste in these calculations, would result in negative emissions in both 2014 (-39,900 MT CO_2e) and 2015 (-40,200 MT CO_2e).
[8] Based on primary travel vendor data, employee-reimbursable mileage and UK Defra factors (https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2015).
[9] Beginning in 2014, emissions are based on primary vendor data where available and economic input-output modelling performed by Climate Earth, Inc., using spend data.
[10] Assumes that all HFC-containing devices shipped for sale were consumed. The amount and identity of HFC in each product is calculated and multiplied by the appropriate global warming potential (GWP) to determine the CO_2e released as a result of product use.
[11] Data not available before 2013.

Our analysis shows that our Scope 3 GHG emissions impacts are greater than our combined Scope 1 and Scope 2 emissions. We are working to reduce those impacts through activities such as reducing waste in our operations, reducing fuel use and looking for opportunities to shift from air shipping to ocean transport when practical. These actions not only reduce our environmental impact but benefit the business by reducing costs. In 2015, we initiated data-gathering with key external suppliers to understand their GHG emissions and reduction programs. We hope that this data will allow us to find opportunities to work with the external suppliers to reduce our combined environmental footprints.

For more information on our GHG emissions, please see our CDP Climate report here.

ENVIRONMENTAL SUSTAINABILITY

AIR EMISSIONS

We are committed to controlling air emissions from our facilities to reduce local, regional and global impacts.

The largest component of air emissions from our facilities is carbon dioxide (CO_2) generated from boilers and power-generation turbines (for heat and energy), and from other combustion processes, such as thermal oxidizers (for treating air emissions) and incinerators (for destroying waste). These combustion processes also result in emissions of nitrogen oxides (NOx) and sometimes sulfur oxides (SOx), depending on the fuels used. We strive to make our facilities more energy efficient through our energy-management programs. By making these improvements, we also reduce emissions of NOx and SOx from our operations.

For more information on our greenhouse gas (GHG) emissions and energy use, click here.

Solvents are one of the largest sources of air emissions from our manufacturing processes and emissions from solvent use are the primary component of volatile organic compound (VOC) emissions. In an effort to reduce these emissions, we use pollution-control technologies such as conservation vents, carbon filters, thermal oxidizers, condensers and scrubbers.

A key element of our Green & Sustainable Science program is to design efficient processes that use fewer and less hazardous solvents. We also use water-based methods for cleaning our process equipment when they are as effective as solvent-based methods. Both of these efforts result in lower VOC emissions.

GRI G4-EN20

GRI G4-EN21

Air Pollutant Emissions by Type (Metric Tons)[1]

	2011	2012	2013	2014	2015
Ozone-depleting substances (ODS)	0.6	2.6	1.6	1.5	0.1
Nitrogen oxides (NOx)	583	580	550	509	474
Sulfur oxides (SOx)	86	65	56	53	47
Volatile organic compounds (VOCs)	618	611	533	523	453

Note: Previously reported data have been restated per our methodology, which includes adding facilities that have been acquired and removing facilities that have been sold.

[1] Data are estimated using conservative assumptions and factors, not measured or weighed.

Our emissions data reflect the facilities we own and operate, our leased facilities and our vehicle and aircraft fleet–related emissions. The decrease in NOx, SOx and VOC emissions between 2014 and 2015 is primarily attributed to more accurate emission-tracking methods, reductions in the use of solvent in our manufacturing operations and our energy-management programs. Emissions of ozone-depleting substances (ODS) are the result of non-routine releases from temperature-control and fire-suppression systems, and can vary significantly from year to year. We saw a reduction in our ODS emissions due to the phase-out of these substances in the European Union in 2015.

MAIN

Our business, our suppliers, our communities and our customers need access to clean water.

Our global water strategy aims to achieve sustainable water management within our operations and our supply chain. Water-use reduction is also one of our three environmental performance goals.

GLOBAL WATER USE

To achieve these strategic objectives, we are focusing on five specific commitments:

- Ensuring our wastewater discharges comply with local and national standards, as well as internal company requirements
- Understanding and reducing our operational water footprint
- Reporting publicly on our water use and goals
- Advocating for effective water policy
- Encouraging and empowering our employees to be water stewards at work, at home and in their local communities

Wastewater from our facilities is managed and treated to meet regulatory standards and minimize environmental impacts. We operate wastewater-treatment plants at many of our production and research facilities. Approximately 65 percent of the wastewater from our manufacturing plants is treated on-site before being discharged to rivers or other surface-water bodies, with the balance going to local municipal wastewater-treatment facilities that have the technology and capacity to treat our wastewater.

All of our facilities are required to meet an internal Environmental Quality Criteria (EQC) program which ensures that our discharges are protective of human health and the environment, based on criteria established in accordance with stringent regulatory review processes. Based on these EQC criteria, each facility assesses the potential risk from their operations, minimizes impacts using industry accepted risk assessment methods and establishes procedures for managing and controlling active pharmaceutical ingredients (APIs). In addition, production facilities have, or are being provided with, API-treatment technology to ensure that our wastewater meets these internal standards.

As we strive to meet the health needs of our patients, we are increasingly operating in regions of the world where clean water and sanitation are under great strain. Even in established markets, our business faces water-related risks. Our water initiatives and performance are further explained in the tabs above. Click on the links below for related information about:

- Pharmaceuticals in the Environment
- Environmental Goals

INITIATIVES

We are engaged in numerous initiatives worldwide to reduce our water use and to understand the water-related risks and impacts in our upstream supply chain.

GRI G4-EN10

Our internal Environmental Standard for Water requires each of our sites to assess the impact of their operations on the local watershed, assure compliance, and drive continuous improvement in how water is used and the quality of water discharged. Our Energy Center of Excellence includes the total cost of water in energy-project evaluations and drives best practices that conserve both energy and water.

Our water-reduction projects in Pennsylvania and Virginia are saving approximately 1.5B gallons of water annually.

GRI G4-EN31

Our water-use-reduction initiatives include:

- Consideration of water use in process design
- Cooling-system optimization
- Prompt repairs and maintenance of steam-distribution systems and traps
- Recovery and reuse of steam condensate and “reject water”

- Process-water purification-system optimization
- Avoiding the use of water in mechanical seals, such as in pumps

In addition, our facility in Singapore uses “NEWater” from the public utility company, which is treated, used water that has been reclaimed for non-potable use in industrial and cooling applications.

Our sites employ a variety of technologies and techniques aimed at reducing our water footprint and improving operational performance:

- Closed-loop cooling systems are employed at more than half our facilities worldwide and reduce our freshwater use by more than 500 million gallons
- Reverse osmosis (RO) “reject water” is reused for non-potable and non-process applications such as cooling-tower feed water and fire water

Over the past several years, we have committed $95 million of our $111 million water-infrastructure-improvement initiative to install API-treatment technology and reduce water use at eight facilities. The remainder of this water fund is expected to be committed by 2018.

Facility-specific projects:

- Our Danville, Pennsylvania, site in the United States recently completed a water-reduction project that will save approximately 1 billion gallons of water per year while reducing operating costs by $600,000 annually. The project included reducing the use of once-through cooling water, installing an upgraded closed-loop cooling system and fitting cooling water distribution pumps with variable frequency drives.
- Our Elkton, Virginia, site in the United States recently completed a water reduction project that saves approximately 465 million gallons of water per year, generates 40 kWh of recovered energy and saves $500,000 annually.

Click here to learn more about our water-use-reduction initiatives.

We have endorsed the UN CEO Water Mandate, a public commitment to adopt and implement a comprehensive approach to water management, and we have aligned our water program with its principles.

GRI G4-15

The CEO Water Mandate endorsers have a responsibility to make water-resources management a priority and to work with governments, UN agencies, non-governmental organizations, local communities and other interested parties to address global water challenges. We are working to identify partnerships that will help us advance our water stewardship priorities in the areas in which we operate.

PERFORMANCE

GLOBAL WATER USE & RISK – PERCENTAGE BY REGION

2015 Water Use and Risk by Region (billion gallons)

	High	Med to High	Low to Med	Low	N/A	% of Total	Total
North America	0.03	4.80	0.14	--	0.03	80%	5.00
Europe, Middle East and Africa	--	0.20	0.37	0.25	0.05	14%	0.87
Asia Pacific	0.19	0.05	0.02	--	0.06	5%	0.32
Latin America		0.02	0.03	--	0.02	1%	0.06
Total	0.22	5.07	0.55	0.25	0.15	100%	6.25

N/A: Categorization was not available.

Water Use (billion gallons)[1]	2009	2010	2011	2012	2013	2014	2015
Extremely high risk	0	0	0	0	0	0	0
High risk	0.4	0.4	0.4	0.4	0.4	0.4	0.2
Medium to high risk	7.2	7.3	6.9	7.1	6.0	5.6	5.1
Low to medium risk	0.7	0.8	0.7	0.7	0.6	0.6	0.6
Low risk	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Not Available	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total[2]	8.8	8.9	8.6	8.6	7.5	7.1	6.3

Note: 2014 figures have been restated.
[1] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired and sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.
[2] World Resources Institute, Aqueduct Water Risk Atlas Overall Water Risk.

GRI G4-EN8

In 2015, the completion of several water-saving projects, combined with reduced demand across our manufacturing network, contributed to a water-use reduction of 0.8 billion gallons from 2014. In 2015, we used 6.3 billion gallons of water versus 8.8 billion gallons used in 2009. This reflects a 29 percent reduction in water use over this period, which has allowed us to meet our 2020 water goal five years early.

Water Use (billion gallons)[1]	2009	2010	2011	2012	2013	2014	2015
Pumped water (surface water and groundwater)	6.4	6.3	6.1	6.3	5.3	5.0	4.2
Purchased water	2.4	2.6	2.5	2.3	2.2	2.1	2.0
Total	8.8	8.9	8.6	8.6	7.5	7.1	6.3

Note: 2014 figures have been restated.
[1] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired and sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.

Approximately 67 percent of the total water we used in 2015 was supplied from nearby surface water and groundwater

resources, with the balance sourced from municipal water supplies. Many of our facilities employ water reuse and recovery strategies, including recirculation of water in cooling towers and condensate recovery.

We use the World Resources Institute's (WRI's) water-risk-assessment tool called "Aqueduct" to measure and map our water risks. The overall risk score relies on 12 different measures grouped into three categories: physical risk quantity (seven measures), physical risk quality (two measures) and regulatory and reputational risk (three measures), which are combined to generate an overall water-risk score.

In 2015, we operated six manufacturing and/or research facilities in areas of high overall water risk. These facilities are located in Singapore, Indonesia and Puerto Rico. Our manufacturing facilities that use the most water are located in areas of medium to high overall water risk and are located in the U.S.

ENVIRONMENTAL SUSTAINABILITY

MATERIALS & WASTE

MAIN

The proper management of materials and waste from our facilities is important to the communities where we operate and is the focus of our environmental permits and other regulatory requirements.

GLOBAL OPERATIONAL WASTE

(% to landfill & incineration without energy recovery)

	2011	2012	2013	2014	2015
Landfill	11%	10%	10%	10%	15%
Incineration	22%	18%	14%	13%	13%
Landfill + Incineration	33%	29%	24%	22%	28%
Goal					?30%

The percentage of waste we sent to landfill and incineration (without energy recovery) increased from 2014 to 2015 due to

changes in the way we handled two nonhazardous waste streams. One waste stream that had previously been composted was required to be landfilled due to a regulatory change. Another stream was burned in an on-site incinerator that is not equipped with energy recovery.

To minimize our environmental footprint, we look for opportunities to avoid the use of hazardous materials, reuse or recycle materials, and prevent the generation of waste. When prevention, reuse and recycling are not practical, we apply controls and treatment technologies to prevent human health impacts and minimize environmental impacts.

Waste minimization begins with the design of our manufacturing processes. Through our Green and Sustainable Science program, we design new processes that use fewer and safer chemicals; consume less energy, less water and other resources; and generate less waste. Our process-development biologists, chemists and engineers have the expertise to create more sustainable ways to make our products.

Additional information on our Waste Prevention & Management, Solvent Use and Chemical Management programs, as well as our performance in these areas, can be found in the tabs above.

PROGRAMS

We continuously strive to decrease the total amount of operational waste we generate, and maximize the use of environmentally beneficial disposal methods like recycling, composting and waste-to-energy.

The amount of waste we generate reflects the efficiency of our manufacturing processes. Our facilities track and report the amount of operational waste they generate and how it is managed.

Waste types are defined differently in various parts of the world. For this report, we have divided our operational waste into two categories:

- **Hazardous waste:** Heavily regulated or high-risk waste streams that need to be either recovered, neutralized, treated or destroyed to address a particular hazard such as toxicity, flammability, corrosivity, radioactivity, pharmaceutically active or infectious
- **Nonhazardous waste:** All other operational wastes

Our definition of operational waste does not include construction or demolition waste from projects, because the amount of project-related waste can vary significantly from year to year based on the number and size of projects.

We reduced the total amount of operational waste generated by 17 percent from 2014 to 2015.This waste reduction helps to lower our manufacturing costs, as well as shrink our environmental footprint.

In 2015, a third of our facilities sent zero operational waste to landfills. In addition, one of our largest research and vaccine manufacturing facilities located in West Point, Pennsylvania in the United States, diverted 85 percent of its operational waste and construction and demolition debris from landfills to more environmentally beneficial facilities.

Our Green & Sustainable Science program supports the design of efficient new manufacturing processes that use less solvent and generate less hazardous waste. To make sure that our hazardous and nonhazardous waste is managed in an environmentally responsible manner, we use only approved waste disposal facilities. Approved facilities demonstrate that they have the systems, technologies and practices to manage our waste streams responsibly and in compliance with all applicable requirements. We routinely verify the systems and practices of these facilities.

SOLVENT USE

Solvents play a key role in the manufacture of our active pharmaceutical ingredients and certain other products, as well as in equipment cleaning. Because of their significance to our business and the life-cycle impact they represent, we focus on

designing our processes to minimize or avoid their use where practical. Where we use solvents, we maximize efficiency, and control them in our emissions, effluents and waste.

We have an active Green & Sustainable Science program to design our new processes using fewer solvents and other hazardous materials, and to reuse and recycle more of the solvents we do use. For cleaning our manufacturing equipment, we use water-based methods when they are equally effective as solvents. At each of our manufacturing sites, we have engineers who are responsible for identifying and driving process-improvement projects. When it is not practical to reuse regenerated solvents in our own production processes, we either work with suppliers who recover the spent solvents for resale to other industries, or burn them as a source of energy. For more information on this practice, please visit our Air Emissions page.

Emissions from solvent use are the primary component of volatile organic compound (VOC) emissions to air. To control emissions of solvents into the environment, we employ treatment technologies and controls such as conservation vents, carbon filters, thermal oxidizers, condensers and scrubbers. Any spent solvents that leave our site as hazardous waste are managed at off-site facilities that are on our approved list of waste management sites.

CHEMICAL MANAGEMENT

A comprehensive and effective chemical-management program is critical to the safety and protection of our employees, the communities in which we operate and the environment.

Comprehensive procedures, systems and processes are in place to manage the approval, procurement, inventory, receipt, transfer, storage, use and disposal of chemicals at all of our sites. We provide our employees and others with information about the identities and potential hazards of the chemicals in our operations and final products through proper labeling of chemicals and creation of safety data sheets.

Learn more about how we manage the environmental fate and effects of our own compounds and products.

PERFORMANCE

GRI G4-EN2

GRI G4-EN23

Hazardous Waste (metric tons)	2011	2012	2013	2014	2015
Incinerated (without heat recovery)	18,106	14,681	11,836	9,724	7,928
Landfilled	1,908	2,761	1,772	1,628	1,652
Recycled	12,987	14,796	10,127	12,196	5,944
Energy Recovery	21,565	24,267	22,181	15,773	11,089
Reused	N/A	N/A	2,114	2,408	1,428
Composted	N/A	N/A	4	4	5
Other	3,021	2,307	2,747	2,387	2,299
Total	57,588	58,813	50,782	44,120	30,344

Non-Hazardous Waste (metric tons)	2011	2012	2013	2014	2015
Incinerated (without heat recovery)	5,615	5,398	1,547	788	1,243
Landfilled	10,135	8,462	7,523	6,349	8,852
Recycled	22,083	23,986	20,073	16,952	15,811
Energy Recovery	7,769	9,075	10,776	10,405	9,706
Reused	246	232	1,478	782	970
Composted	4,062	3,339	3,849	4,094	3,018
Other	1,009	166	229	242	304
Total	50,919	50,658	45,476	39,613	39,905

Hazardous & Non-Hazardous Waste (metric tons)	2011	2012	2013	2014	2015	Reductions since 2011
Landfill & Incineration	35,764	31,303	22,679	18,489	19,675	45%
Landfill	12,043	11,223	9,296	7,977	10,504	13%
Incineration	23,721	20,079	13,383	10,512	9,172	61%
Recycled, Energy Recovery, Reused, or Composted	68,713	75,695	70,603	62,615	47,971	30%
Other	4,030	2,473	2,976	2,629	2,603	35%
Total	108,507	109,471	96,258	83,733	70,249	35%

In 2015, we managed approximately 70,000 metric tons of waste from our operations, a 17 percent decrease from 2014. Of this, 30,000 metric tons were hazardous waste, a 32 percent reduction versus the prior year. The reduction is in large part a result of certain manufacturing processes being discontinued or transferred to external partners.

Of the hazardous waste we generated in 2015, 68 percent was beneficially reused in some way. 20 percent of our hazardous waste was sent off-site for recycling and was either returned to us for reuse or sold to other industries. Another 36 percent was burned to generate power or as a fossil fuel substitute in industrial furnaces, such as cement kilns. Of the hazardous waste that couldn't be recycled or beneficially reused, 26 percent was incinerated. Approximately 6 percent was sent to hazardous-waste landfills.

We recycled, reused or composted 50 percent of the 40,000 metric tons of nonhazardous waste we generated in 2015. Recycling and composting rates are increasing as more large-scale composting and broader recycling infrastructure is becoming available in the regions where we operate. We are evaluating and refining the programs in place at our facilities to reduce waste generation and increase recycling.

Solvent Use (Metric Tons)	2011	2012	2013	2014	2015
Total solvents used	53,000	46,000	42,000	35,000	23,000
Fresh solvents used	36,000	33,000	31,000	24,000	15,000
Recovered solvents used	17,000	13,000	11,000	11,000	8,000

Previously reported data have been restated per our methodology, which includes adding facilities that have been acquired and removing facilities that have been sold.

In 2015, we used 15,000 metric tons of new solvents and 8,000 metric tons of recovered solvents in our production processes and cleaning activities. The decrease in total solvent use is the result of lower production volumes of active pharmaceutical ingredients at our facilities combined with newer, more material-efficient processes. In 2015, we used recovered solvents for 35 percent of our manufacturing and cleaning needs.

We are committed to understanding, managing and reducing the impacts of our products and the materials associated with discovering, producing and delivering them to our customers.

GRI G4-EN27

Ensuring that our products are designed, made and used in a safe and environmentally sound manner is one of our highest priorities. We deliver on this commitment by actively pursuing improvement initiatives, maintaining a highly trained and capable internal scientific community, and collaborating with experts in academia and with consortia with pursuing programs in this field.

GRI G4-PR1

Our product stewardship programs focus on identifying and either preventing or minimizing potential safety and environmental hazards throughout the product life cycle. We conduct extensive testing of our products to identify and understand possible safety, health and environmental hazards. We manage and communicate information about hazardous materials to keep our employees, contractors, transporters and other partners safe.

Our chemists and engineers are trained on in green design principles and are provided with tools and resources to help them develop manufacturing processes that use fewer and safer raw materials. We use innovations like nanotechnology to make our products more effective while recognizing that extra care is required when dealing with these new materials.

Complying with chemical substance and product requirements is a top priority for us. We track numerous existing and emerging chemical control regulations that require notification and registration of specific types of chemicals. To fulfill these requirements, our scientists complete assessments of the environmental and human health risks of our substances and submit the required regulatory notifications. Additionally, we provide details on product use and risk-based control measures as necessary and in accordance with applicable regulations.
Our program extends downstream to our customers and consumers through the design of effective product packaging. We also make provisions for product returns and offer guidance on the disposal of unused medicines.

Optimal packaging design protects our products in a compliant manner, and meets or exceeds customer needs, with the minimum possible environmental impact.

The packaging we use for our finished products and in-process materials serves a range of important purposes. The foremost is to protect the purity, efficacy and physical integrity of the product. Packaging also provides the customer with information and convenience, the pharmacist or provider with accurate dispensing information at the point of purchase, and our business with marketing value. For some products, the packaging also serves safety functions, such as child-resistance and tampering evidence.

In recent years, we have implemented strategies to reduce the amount of packaging line waste we generate. We have also developed “Design for Environment” guidelines that will help our engineers design new product packages that are better for the environment by minimizing package sizes and using more environmentally friendly materials, where possible. As we continue to expand our packaging-improvement efforts, we are making sure that our changes do not increase product loss rates, since that would offset the environmental benefits of packaging improvements.

Our Design for Environment guidelines help our engineers design packages that minimize package sizes and use more environmentally friendly materials.

To help us evaluate the environmental differences between packaging options, we use a simplified life-cycle assessment software tool called COMPASS® (Comparative Packaging Assessment) that has been thoroughly vetted by independent verifiers and member companies within the Sustainable Packaging Coalition (SPC), and is supported by the U.S. Environmental Protection Agency (EPA).

For more information about waste-reduction efforts at our facilities, click here.

PRODUCT STEWARDSHIP

GREEN & SUSTAINABLE SCIENCE

Finding cleaner and more efficient ways to make lifesaving, innovative medicines is good for business and contributes to our “Be Well” mission.

One of the key components of our Environmental Sustainability Strategy involves using innovative science and technology to design manufacturing processes that will minimize our environmental footprint. By using more efficient processing methods, we can reduce the amount of energy, water and raw materials we use to make our products, and also reduce the amount of waste we generate.

We calculate how many kilograms of raw materials (including water) are used to produce one kilogram of an active pharmaceutical ingredient, to identify process improvement opportunities.

In 2015, we renamed our internal Green Chemistry program “Green and Sustainable Science” to be more inclusive of the various environmental improvement programs in all of our research areas, including chemistry, biologics and vaccines. Our scientists and engineers are trained in the use of green design principles and have the skills to design more environmentally benign manufacturing processes.

We see science and innovation as critical enablers to developing sustainable, low-cost manufacturing processes, which provide both environmental and economic benefits over the lifetime of our products. We have increased our focus on innovative approaches such as biocatalysis, which provides a more sustainable means of manufacturing complex pharmaceutical compounds than traditional chemical synthesis methods.

GRI G4-EN27

As part of our Green and Sustainable Science program, we calculate the Process Mass Intensity (PMI) of our human health products. PMI reflects the number of kilograms of raw materials (including water) used to produce one kilogram of an active pharmaceutical ingredient (API) or biologic. PMI is a good indicator of how efficiently we convert raw materials into final

products. We use this metric internally to compare different manufacturing methods, identify process improvement opportunities, and track our progress.

Since the establishment of the annual Presidential Green Chemistry Award by the U.S. Environmental Protection Agency in 1996, we have been the only pharmaceutical company to be recognized with three Green Chemistry Awards for innovative process improvements.

We are a founding member of the American Chemical Society's Green Chemistry Institute® (ACS GCI) Pharmaceutical Roundtable, a partnership between the ACS GCI and member pharmaceutical companies. In addition to developing new tools that drive the integration of sustainability into process design, Roundtable members work together to support and advance academic research and education on new ways to apply green science and engineering principles to pharmaceutical discovery and production processes. We are currently collaborating with other ACS GCI member companies to develop new tools and publish information about sustainable production practices that are specifically relevant to bioprocessing.

For more information about our efforts to increase the use of recovered solvents and to prevent waste, click here.

PRODUCT STEWARDSHIP

NANOTECHNOLOGY

We support the use of nanotechnology to develop innovative drugs and vaccines that address the unmet medical needs of people and animals.

Nanotechnology broadly describes the use of very small materials—ranging normal materials, extremely reduced in size, to unique, minute substances such as carbon nanotubes and other exotic materials. We have a public policy statement that explains our approach to using nanotechnology responsibly.

The testing required for all drugs ensures that nano-based pharmaceuticals are safe and effective for patient use. Our safety and health professionals closely monitor developments in this area. Based on current knowledge of nanoparticles, our existing methods of assessing risks and applying controls are well-suited to minimizing the risks of exposure among employees and in the environment.

Here are a few examples of how we use nanotechnology to improve health:

- **Human Health:** EMEND® (aprepitant) uses a nanoscale milling approach to make its granules very small so that they are more easily absorbed by the digestive tract
- **Animal Health:** Nanoscale milling is used for the active ingredient in PANACUR® (fenbendazole) to produce a stable and more easily re-suspendable formulation, which makes the product easier to administer and provides for improved dosing

PRODUCT STEWARDSHIP

PHARMACEUTICALS IN THE ENVIRONMENT

We are committed to understanding and managing the environmental impacts of our products throughout their life cycles—from discovery through manufacturing, use and disposal.

We conduct environmental risk assessments on our products from the development phase through product launch to understand and manage product impacts from manufacturing and patient use. We assess products in a manner consistent with the most stringent applicable global regulations, including the regulatory review processes of the the U.S. Food and Drug Administration and the European Medicines Agency. Product environmental safety profiles are reassessed during periodic renewals of product filings, and risk-mitigation actions are implemented when needed.

We carefully monitor scientific research on the issue of pharmaceuticals in the environment, in particular studies that evaluate the potential effects pharmaceutical products may have on the aquatic environment and human health.

Pharmaceutical compounds have been found to enter the environment primarily through the use of medicines by humans and animals, and the subsequent excretion into wastewater treatment systems, water bodies or soil. Other potential environmental routes include manufacturing wastewater discharges and waste disposal.

We use the information from our risk assessments to establish or update our internal, compound-specific Environmental Quality Criteria (EQC), which are used to assure that wastewaters discharged from our facilities do not contain residual products that present a risk to human health or the environment. Manufacturing facilities are required to use these EQC, along with industry-accepted risk-assessment methods, to establish procedures for managing and controlling active pharmaceutical ingredients (APIs) in their wastewater. Our production facilities have, or are currently being provided with, API-treatment technology to ensure that our wastewater meets these internal EQC standards. Our facilities are also required to incinerate any product-containing solid waste streams, unless restricted by local regulation.

We carefully monitor scientific research on the issue of pharmaceuticals in the environment (PIE)—in particular, studies that evaluate the potential effects pharmaceutical products may have on the aquatic environment and human health. We support the use of science-based environmental risk assessments, and we will continue to collaborate with regulatory, academic, health care and research organizations to identify additional needs for data on the migration, duration and effects of pharmaceuticals in the environment.

For more information about how we reduce the impacts of our products in the process design stage, read about our Green & Sustainable Science program.

OVERVIEW

EMPLOYEES

We recognize that our ability to excel depends on the integrity, knowledge, imagination, skill, diversity and teamwork of our employees.

Material topics: Diversity and Inclusion, Employee Volunteerism, Labor Practices, Occupational Health & Safety, Restructuring, Talent Development and Recruitment, Wellness and Work-Life Balance

THE CHANGING DEMOGRAPHICS OF OUR INDUSTRY, PATIENTS AND COMPANY

Working from a diversity of thought is no longer an aspiration, it is a business imperative for our company. The demographic makeup of our patients and customers is changing, and we are striving to keep pace. Approximately 50% of new recruits this past year have been women, and 33% ethnically diverse.

LEARN MORE

FOSTERING A LEARNING CULTURE THROUGH EMPLOYEE TRAINING, EDUCATION AND DEVELOPMENT

A positive, inclusive and high-performing work environment helps enable our employees to fully contribute to their teams' objectives. Our commitment to training and education serves as the foundation for employee development, aligns with our business strategy, and is key to a learning culture.

LEARN MORE

PRACTICING OUR MISSION: HEALTH, SAFETY AND WELL-BEING

In keeping with our mission to save and improve lives, we are committed to helping our employees and contractors be well. We believe that through visible management, leadership and engagement, we can help them make the right choices when it comes to safety, health and the environment.

LEARN MORE

EMPLOYEES AT-A-GLANCE

We're working to create a 21st century workforce that is **gender balanced** and **inclusive of top, diverse talent.**

DiversityInc 2016 TOP 50 COMPANIES FOR DIVERSITY®

PART OF DIVERSITY INC'S 2016 TOP 50 COMPANIES FOR DIVERSITY

50% of new hires globally were female

33% of new hires in the U.S. were members of underrepresented ethnic groups

EMPLOYEES AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our Employees. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

Key Performance Indicators

Diversity & Inclusion	2011	2012	2013	2014	2015
Executive roles held by women[1,2]	35%	31%	31%	31%	34%
Women on the Board	17%	17%	17%	17%	21%
Underrepresented ethnic groups on the Board	11%	25%	25%	25%	21%
Underrepresented ethnic groups of executives (U.S.)[2]	17%	17%	20%	20%	20%
Underrepresented ethnic groups in the workforce (U.S.)	29%	24%	24%	24%	26%

Well-Being	2011	2012	2013	2014	2015
Response rate to the Voice Survey[3]	63%	77%	77%	78%	NA
Employees who completed a health assessment (U.S.)	58%	58%	62%	57%	58%
Lost-time incident rate (LTIR)	0.30	0.27	0.28	0.20	0.21
Recordable injury rate (RIR)	0.74	0.62	0.61	0.57	0.47

Volunteerism	2011	2012	2013	2014	2015
Employees who took release time according to the global policy on employee volunteerism[4]	11.0%	15.0%	NA	12.5%	13.8%
Volunteer hours[4]	213,000	221,000	NA	186,400	80,585

NA: Not available.
[1] Beginning with 2012, data reported for women are global; previously, these data were limited to the U.S.
[2] "Executive" is defined as the chief executive officer and two structural levels below.
[3] In 2014, we moved to a biannual administration of our global employee engagement survey.
[4] 2015 figures are based on employee self-recorded volunteer hours through MSD Gives Back in the U.S. and Puerto Rico, and volunteer hours communicated directly to the Office of Corporate Responsibility for all other countries. 2015 marks the first year in which volunteer-hour reporting is based solely on employee self-report. Prior years included estimates for unrecorded volunteer hours.

EMPLOYEE WELL-BEING

Today's professionals are interested in finding work environments that are amenable to their meeting personal life needs and to engaging interests that support and enhance their emotional and social well-being.

TOTAL REWARDS

Our employees are the key to our success. We demonstrate our commitment to them by offering competitive and valuable compensation and benefits package as well as resources to support professional achievement and personal well-being.

ENGAGING OUR EMPLOYEES

We strive to foster employee engagement by promoting a positive work environment and by communicating proactively with all employees. Employee engagement is achieved through transparent communication, mutual commitment and trust.

FOR MORE INFORMATION ON EMPLOYEES

LEARN MORE

EMPLOYEES

POSITIVE WORK ENVIRONMENT

MAIN

Our employees are the fundamental link to actualizing and achieving our vision of solving the greatest healthcare challenges and helping the world “be well.”

A positive, inclusive and high-performing work environment is essential in order for employees to feel welcomed and valued, and to be able to fully contribute to the business objectives of their teams. We recognize that harnessing the knowledge and insights of a globally diverse workforce requires leadership, a corporate culture of respect and full engagement, and a thoughtful and strategic approach to employee development, workplace inclusion and employee well-being—physical, emotional, social and financial.

2015 was a year of revitalized commitment and new and improved initiatives that effectively will lead us into the future to meet the challenges and opportunities before us. The following pages highlight our accomplishments, progress and commitments that promise success now and in the future.

We provide numerous opportunities for employee development and professional growth, competitive compensation and benefits, and a focus on health and safety. We leverage global diversity and inclusion to create a 21st century workforce that is gender-balanced and inclusive of top, diverse talent.

Interested in joining our company's mission to save and improve lives?

REVIEW OPEN JOB POSTINGS

We conduct rigorous and transparent annual performance reviews of employees at all levels (except those subject to collective bargaining obligations) to guide company decisions relating to compensation and rewards. Employee performance is measured, in part, by how well employees demonstrate our leadership behaviors. In other words, we seek to emphasize not just what an employee achieves, but also how he or she achieves it. It is critical to our company that the annual incentive bonus of management-level employees is determined, in part, by demonstrated leadership that is consistent with these behaviors.

In addition, we conduct an annual employee-development planning process in which managers discuss with each of their employees his or her strengths and development needs. The manager and employee then jointly create an action plan to strengthen areas in need of development and build new leadership skills.

PERFORMANCE

GRI G4-LA11

Performance Reviews

	2011	2012	2013	2014	2015
Executives[1]	100%	100%	100%	100%	100%
Middle Management	100%	100%	100%	100%	100%
Line Supervisors	100%	100%	100%	100%	100%
Non-Managers[2]	93%	93%	93%	93%	94%

[1] "Executive" refers to the first two levels below the chief executive officer.
[2] Includes all "non-managers" (previously "individual contributors") who are not subject to a collective bargaining agreement (unions).

GRI G4-LA1

Turnover

	2011	2012	2013	2014	2015
Overall turnover rate[3,4]	14.0%	11.0%	15.4%	18.8%	14.8%
Voluntary turnover rate	6.0%	5.0%	7.3%	8.0%	7.4%
Avoidable voluntary turnover rate	1.0%	1.0%	5.8%	6.2%	6.0%
Involuntary termination rate	7.0%	5.0%	8.1%	10.8%	7.4%

[3] Includes all types of turnover, including restructuring.
[4] 2013 and 2014 turnover rates are restated by incorporating the retroactive transactions.

Employee Hires by Region (2015)

	Number of Hires	Hire Rate[5]
EM—Asia Pacific	2,104	17.70%
EM—EEMEA (Eastern Europe, Middle East and Africa)	384	12.84%
EM—Latin America	509	9.80%
EUCAN (Europe and Canada)	1,427	7.81%
Japan	101	2.66%
U.S.	1,909	8.28%

[5] Percent of new hires in the total onboard headcount; regular employees only.

POSITIVE WORK ENVIRONMENT

ENGAGING OUR EMPLOYEES

MAIN

We strive to foster employee engagement at our company by promoting a positive work environment and by communicating proactively with all employees.

Research shows that engaged employees work more efficiently and effectively, are motivated to perform beyond minimal expectations, and consequently contribute more desirable business outcomes to the organization.

Employee engagement is achieved through trust, mutual commitment and transparent communication. Maintaining employee engagement requires a bottom-up (from employees) and top-down (from the company) communications strategy. As we do with our external stakeholders, we work to understand our employees' concerns, needs and thoughts pertaining to our company's strengths and weaknesses, while at the same time informing them of our business strategy and progress towards our goals.

Through our global enterprise portal, known internally as "Sync," employees worldwide can gain access to company news and videos, divisional and functional news channels, and organizational communities that allow them to share interests, messages and ideas online. Other employee communications vehicles include quarterly Employee Business Briefings, periodic town hall meetings, email communications from senior management and employee surveys–in particular the Voice Survey which reaches all employees.

VOICE SURVEY: OUR GLOBAL EMPLOYEE OPINION SURVEY

As part of our mission to maintain a satisfying and productive work environment, we routinely survey all employees to learn their perspectives on the business and on how we are responding to the needs of our global workforce. The Voice Survey, an all-employee opinion survey, is our flagship employee feedback medium.

As of 2015, the Voice Survey has been moved to a biannual administration.

Offered in 20 languages, the Voice Survey helps our company leaders and managers understand employees' perspectives on our culture and its effect on the company's ability to meet our business objectives, as well as what drives employee engagement. We communicate highlights of the survey results through meetings with our employees, in our employee publications, on Sync and through summaries that are distributed via email.

PERFORMANCE

Voice Survey

	2012	2013	2014	2015
Response rate to Voice Survey	77%	77%	78%	NA
Engagement Index[1] (favorable response rate)	78%	78%	79%	NA
Culture Index[2] (favorable response rate)	67%	70%	72%	NA

NA: Not available.
[1] The Engagement Index is a composite averaging scores from three aspects: engaged, enabled, and energized.
[2] The Culture Index is a composite averaging scores from three aspects: customer focus, reputation and trust, and innovation.

While we didn't conduct the Voice Survey in 2015, overall results from previous years are encouraging, and suggest positive momentum for the organization. Employees feel that the strategy is moving us in the right direction. Since administration of the 2014 survey, we've been working to increase collaboration, share customer insights, and drive innovation. We're looking forward to the September 2016 administration to evaluate how effectively we've addressed these employee issues.

PROFESSIONAL NETWORKING AND COLLABORATION

We enable employees to provide feedback through a community platform on Sync and via brief, three-to-five-question surveys and open-comment forms attached to key communications. Soliciting employee feedback on the subject of the communication in real time gives us the information we need to close knowledge gaps and address employee concerns. Such direct employee feedback has resulted in "meet and greet" sessions hosted by our CEO and our Executive Committee that give employees yet another opportunity to share information with senior leaders in a more personal setting.

We conduct global employee briefings every quarter. Our CEO and members of the Executive Committee speak to employees about how we are fulfilling our company mission and goals. These sessions cover topics such as the quarterly financial performance update, pipeline progress, customer stories and anticipated product developments.

We ensure that our employees have ample opportunity to engage, network, build important stakeholder relationships, learn new skills, and hear the perspectives of the senior-most leaders to broaden their thinking. Our company creates a nurturing, inclusive environment, by ensuring that employees quickly develop strong relationships with supervisors, connectivity with coworkers, and meaningful work growth and development. In addition, we leverage the business insights of all employees, including those who are members of D.R.I.V.E.N. (Delivering Real Insights Via Employee Networks), to support our company's business objectives. DRIVEN represents true innovation in the pharmaceutical industry and allows us to take the best practices from other industries to get the quick, cost-effective and deep insights we need to drive our business forward by asking our own employees to share their experiences.

Through DRIVEN, employees are able to make meaningful contributions to the business in a private, online market research community. This enables efficient and compliant engagement of employees to provide business, customer, brand and research development insights via market research methods.

OTHER RESOURCES FOR EMPLOYEE FEEDBACK

In addition to employee surveys, the "ombudsmen" within our Office of Ethics provide an avenue for employees to raise concerns in confidence, and where necessary, they recommend appropriate action. Our anonymous helpline, which operates in accordance with applicable legal standards for employee-based hotlines, is available 24/7 to listen and provide advice to employees worldwide. Learn more.

POSITIVE WORK ENVIRONMENT

LEARNING & DEVELOPMENT

To support our global employee base, we sponsor curriculum that builds leadership and management skills as well as providing technical and functional training to all employees.

The Global Learning & Development organization, under the leadership of the chief learning officer (CLO), deploys a global approach to maximizing the value of Learning & Development investments by leveraging resources, learning platforms and other synergies across the enterprise for maximum momentum toward business and customer objectives.

Our commitment and investment in Learning & Development serve as the foundation for global employee development, align with our business strategy, and are foundational in moving our company toward a learning culture.

KEY TALENT PROGRAMS

In partnership with the Human Resources Talent Management team, the Leadership, Learning & Development department is reaching deeper, wider and earlier into the organization to develop top talent. We are striving to develop a cross-functional general management mind-set, enterprise wide knowledge of the business and end-to-end thinking for top talent and potential leaders early in their careers.

Key investments and programs that support the development of key talent include the Executive Development Program, Emerging Leaders Program, Women's Leadership Program and Business Leadership Program. Each has a very specific targeted audience and blended learning objectives.

MANAGEMENT FOUNDATIONS

Management Foundations is a comprehensive program that focuses on building core, common and critical knowledge and skills for new managers. Using a variety of learning methods, new managers focus on what they will need to know and do to be effective in their role and to gain the knowledge and skills to manage others.

TEAM DEVELOPMENT

There is a suite of programs for team development and team building, ranging from formal learning experiences to "action learning"–based activities that help team leaders and team members develop skills and competencies as they pursue real business goals.

MYCAREER

myCareer is a program intended to be used by employees and managers to conduct human resources–related activities and plans. It is the gateway to professional development, performance management, talent management and learning across the company?globally. The primary business purpose of myCareer is to facilitate more effective, consistent and efficient company-wide performance management, talent reviews, succession planning, and associated employee performance and development processes through a single, integrated and automated global system of record for critical talent data about our employees. This helps to ensure that our workforce continues to realign itself with company objectives.

CAREER & LEARNING PORTAL

The Career & Learning Portal provides employees at all levels with thousands of resources to support their career development and learning needs. Resources are aligned to our Leadership Behaviors, Professional Competencies, Career Accelerators, and Functional Competencies, and are available in the following formats: “on-demand” web-based modules, classroom programs, articles, books (including audio books), webcasts and suggestions for “on-the-job” development activities. The Career & Learning Portal also provides a community in which employees can connect with and learn from others.

Our company recognizes that our people are critical to our mission of improving and saving lives around the world.

One way in which we recognize the importance of our people is to provide a valuable suite of compensation and benefit programs as well as resources to support our employees' professional achievement and personal well-being. Together, we call these "Total Rewards."

Total Rewards include compensation and financial rewards, health and insurance benefits, opportunities for employees to develop their skills and grow their careers, and programs that help meet the demands of managing an employees' professional and personal well-being. Our philosophy behind these programs is rooted in maintaining our competitive position in the market while providing a comprehensive and valuable package of rewards that supports our business, recognizes individuals and aligns employees with the future needs of our company.

In 2015 in the U.S., we launched myTotalRewards, an online personalized resource that provides U.S. employees with a simple, consolidated view of his/her total compensation and financial rewards at our company. For most active employees (certain groups are excluded, such as those that are subject to collective bargaining) myTotalRewards contains the following detailed information:

- **Money**: Annual pay, cash incentives and our company's estimated contribution to pension, 401k, insurance, and other benefits
- **Health**: The value of the key health benefits in which you participate including medical, dental, and vision coverage
- **Retirement & Long-Term Incentives:** Retirement benefits and long-term incentives–and how they've grown over time
- **Other Rewards**: Other benefits available such as educational assistance, college coach, and financial planning

As of April 2016, over 80 percent of eligible managers and 55 percent of eligible employees had already accessed their *my*TotalRewards statements.

For employees subject to collective bargaining obligations within and outside of the U.S., we comply with any and all applicable contractual and legal obligations in providing information to employees.

COMPENSATION

GRI G4-EC3

Our compensation programs are designed using a pay-for-performance approach and recognize and reward employees for their accomplishments and the value they bring to the company. The programs target different aspects of individual and company performance and are monitored to ensure that they are competitive with those of other companies—and appropriate to the markets in which we compete for talent.

- **Competitive Base Pay**: Individual base pay based on job, market-aligned pay range, experience, skill level and individual performance
- **Short-Term Incentives**: Cash award programs to reward employees on the basis of company and/or individual performance versus objectives
- **Long-Term Incentives**: A future-oriented program that rewards the demonstration of individual performance, leadership and potential (based on sustained performance) through stock-based incentives
- **Recognition Awards**: Programs designed to recognize employee service milestones and reward the outstanding contributions of individuals and teams

BENEFITS

GRI G4-LA2

Our company's health and wellness, retirement, and insurance programs draw from best practices to ensure quality, competitive value, protection from significant financial hardship, and access to tools and resources to support employees and their family members at all stages of their career.

In the U.S., we generally offer health, life, disability and business travel insurance, and retirement income benefits to all employees, including part-time employees. Employees also can opt to contribute to tax-free Flexible Spending Accounts for reimbursement for certain health spending and/or dependent-care costs.

Outside the U.S., while benefits may vary by region and country, we offer health insurance, life and injury insurance, disability insurance, retirement income benefits and insurance for business travel. In addition, in many countries where legally permitted, including the U.S., we extend health care and various insurance benefits to employees' domestic partners and their partners' eligible dependent children.

Worldwide, our company offers retirement benefits that are competitive with those of our peers and the general industry in each market we serve. In the U.S., for example, we offer a defined benefit pension plan, as well as a 401(k) plan with company matching contributions. To assist in personal investment decision making, we offer all U.S. employees the Ernst & Young Financial Planning Program at no cost. And U.S.-based employees who are at least age 55 and have at least 10 years of service as of age 40 (for certain employees, service before age 40 also counts) are eligible for subsidized medical benefits at retirement. Outside the U.S., we have more than 80 pension plans (including defined benefit, cash balance and defined contribution plans) in over 40 countries. These plans often supplement government-sponsored Social Security pension benefits to improve employees' financial security through added retirement income.

For employees who are traveling between sites or otherwise traveling on company business, we offer business travel accident insurance, a global medical benefits abroad policy and emergency travel assistance.

OTHER BENEFITS AND SERVICES

Offering on-site services that support an inviting work environment where employees can thrive is another component of our company's Total Rewards proposition.

At the majority of company sites, including the company headquarters in Kenilworth, N.J., USA, employees have the option of making an appointment to see a health care professional on site—and usually on the day they need to—for such services as immunizations, biometric screenings and treatment for minor aches and pains. The vast majority of sites globally are tobacco-free and many encourage healthy behaviors by having on-site fitness centers, walking trails and well-lit stairways.

At many of our sites, we also offer services such as cafeterias, child care, dry cleaning, automobile services and other amenities. In the U.S., our employees have the option of banking through our company's Employees Federal Credit Union, which offers competitive interest rates on savings accounts and lending.

For those who need flexibility, our company offers a global Flexible Work Arrangement policy that allows employees to work remotely or on a different work schedule that best fits their needs.

In keeping with our company's business mission to save and improve lives, we are committed to helping our employees be well and stay safe.

We know that "being well" goes beyond physical well-being to also include emotional, social and financial well-being. Only when our employees feel at their best, in all aspects of their lives, can they perform at their best.

We provide employees with access to a wide variety of health services, programs, resources and tools to support their health and well-being and to ensure that they return home from work every day healthy and safe. We take preventive actions and closely track workplace accidents, injuries and illnesses so that we can address problems promptly and work toward eliminating occupational injuries and illnesses.

Interested in joining our company's mission to save and improve lives?

REVIEW OPEN JOB POSTINGS

We believe there are many benefits to this approach. First, the health and well-being of our workforce have a direct link to optimal workforce performance. Whether work is done at the office or at home, sickness, injury and stress can affect a person's ability to perform and contribute effectively. Because our business is promoting optimal health, we believe we must lead by example. We also believe that a constructive approach to our employees' health and overall well-being, in all aspects of their lives, helps to recruit and retain top talent.

Every day, our employees are resolutely focused on providing products and services that save and improve lives around the world.

Living this mission starts with ensuring that our employees are caring about themselves, their families and their communities. Our Global Employee Health department works closely with the Global Benefits department to provide a wide range of health and wellness services and work-life programs to our employees, retirees and their covered dependents.

These offerings cover the continuum of care for those who are well, those at risk, those with acute or chronic illnesses, and those requiring complex or catastrophic care. Many of these services and programs are provided at on-site employee health clinics or through programs managed by our vendor partners. These all work in conjunction with our comprehensive coverage through our health benefits offerings.

Our on-site health clinics offer flu shots, vaccinations, and other health care services.

Our company is building a culture of holistic well-being that starts with physical health. An initiative branded "*LIVE IT*: Be Well," encourages employees to make healthy choices every day?about how they take care of themselves, the food they eat, the activities they pursue and their attention to overall well-being. *LIVE IT* officially launched in the U.S. in 2011 and has since been formally expanded to China, Hong Kong, Canada, Puerto Rico, India, Australia and Vietnam, covering over 55 percent of global employees. And, while the *LIVE IT* brand has not been communicated in every country, many of the resources and key messages about the importance of taking care of oneself and "being well" are delivered globally.

As part of the *LIVE IT* initiative, our company offers a health and wellness website to all eligible U.S.-based employees (except those covered by collective bargaining agreement) and their dependents. The site features a Personal Health Assessment (PHA), online interactive health tools and information, health-coaching programs, and more. Over 80 percent of eligible U.S. employees have registered to access the site. The website is designed to raise awareness about an individual's health status and to motivate employees to manage and improve their health and well-being. It includes topical health summaries based on scientific evidence and links to reliable health care information. Mobile technology solutions continue to be added to help employees manage their health while not at their desks during the workday.

The online PHA is promoted during annual enrollment each fall as part of our *LIVE IT* initiative. Once employees, spouses

or partners complete the PHA, they receive a customized report that summarizes their health status and offers suggestions for personal goal-setting. Anyone who takes the assessment and wants to work on an identified health risk has access to a telephonic personal health coach or an online lifestyle coach who provides advice and encouragement and regularly monitors progress. A special tobacco-cessation coaching program, branded "*LIVE IT*: Tobacco-Free," is also offered to those who wish to quit using tobacco products. Participation in the health assessment and in other programs is voluntary and confidential.

Results from the PHA are used to help develop programs such as our weight management program, which consists of both the Weight Watchers Reimbursement Program (on-site Weight Watchers at work meetings) and Healthy Solutions® at Home, a clinically proven weight-loss program featuring meal replacements and personal coaching, offered through our subsidiary HMR Weight Management Services Corp. Since the launch in January 2014, over 200 employees have participated in HMR's Healthy Solutions at Home program. The average weight loss for Phase 1 and 2 participants was 20.7 pounds, which represents an average reduction in BMI of 3.3, and the average loss per week (for those who attended at least 10 of 12 classes) was 1.8 pounds. The average weekly physical activity of participants was 2,095 kcals.

We are also committed to providing a safe workplace for all of our employees around the world and to complying fully with all applicable country and local safety laws and regulations. We strive to eliminate work-related injuries, illnesses and unplanned events from our global operations through comprehensive safety programs that are part of our overall Environmental, Health & Safety (EHS) management system. The design of our facilities and processes; our process controls; our protection systems; and our emergency response capabilities are critical components of our overall effort to minimize the frequency and severity of safety and environmental incidents.

Learn more about Employee Safety.

ON-SITE CLINICS

The majority of our sites offer on-site health clinics that provide a wide array of services to help our employees stay or get well.

Specific services include:

Annual Flu Shots And Pandemic Flu Planning—Most of our sites around the world offer employees annual flu shots. In the U.S., our Global Employee Health group provides annual flu shots at no cost to employees at site-based employee health clinics. In 2015, nearly 6,500 flu shots were provided in the U.S., Canada and Puerto Rico. In addition, with guidance from Global Employee Health, most of our sites have also developed site-specific pandemic flu preparedness plans, employing a variety of countermeasures that focus on heightened awareness and tactical procedures.

Vaccinations—Our on-site clinics in the U.S., as well as many around the world, offer employees both occupational vaccinations (including travel-related vaccinations) and non-occupational vaccinations for such diseases as pneumonia, shingles and cervical cancer. In the U.S., each year in March, we run a campaign to promote and raise awareness of the shingles vaccine; in May, we run a campaign to promote and raise awareness of the pneumococcal vaccine. Through the Express Scripts Retail Vaccination Program available in our U.S. medical plan, applicable to most U.S.-based employees, participants may also receive certain vaccinations at participating retail pharmacies without member coinsurance/copay.

Lab, Acute Episodic Health Care And Other Services—Many of our on-site clinics offer employees the opportunity for lipid, blood glucose and other laboratory services, including blood collection ordered by a personal physician. Each year during the annual enrollment period in the U.S., employees can make an appointment to have their biometric screening done in preparation for their annual PHA.

Most Global Employee Health clinics also provide non-work-related acute episodic health care, including the diagnosis and treatment of minor non-occupational illnesses or injuries; health maintenance counseling; and appropriate referral to specialty services. In addition, to support new mothers returning to work, our clinics offer work-site lactation programs. "Lunch and Learn" programs and site-based wellness activities, including walking and weight-reduction programs, are also available at some sites.

OCCUPATIONAL HEALTH

GRI G4-LA7

As a global organization, our company has numerous operating divisions and work assignments—each with its own range of requirements. Particular work assignments may involve potential exposure to one or more occupational hazards, such as noise, mixtures of chemicals, or hazardous biological compounds. Our company maintains a concerted effort to assess and control workplace hazards (chemical, biological and physical) and to make sure that each employee's work assignment is safe and consistent with his or her evaluated capabilities.

Occupational health programs are developed and implemented in accordance with identified health risks and applicable regulatory requirements. In the event that an employee becomes injured or ill while performing his or her job, we have programs in place for treatment and rehabilitation.

Our company's Global Employee Health professionals are clinically trained and dedicated to supporting efficient and effective quality health care for employees who become injured or ill as a result of their work. They advise on and coordinate health care with providers or agencies to ensure a smooth treatment-and-recovery process, while complying with both company and applicable regulatory record-keeping requirements.

SMOKING POLICIES

The majority of our sites around the world have a no-smoking policy or a smoke-/tobacco-free policy in place. These policies send a strong message that the company is committed to promoting healthy lifestyles and to protecting its employees and visitors from the harmful effects of tobacco. In addition, the majority of U.S.-based employees have access to *LIVE IT*: Tobacco-Free, a telephonic personal health-coaching program that helps participants quit the tobacco habit. Our corporate headquarters in Kenilworth, N.J., USA, is a tobacco-free campus.

FITNESS CENTERS

We offer access to on-site fitness centers at several large U.S. facilities, as well as at other company facilities around the world. In 2015, we opened new fitness centers in Beijing and Shanghai and announced the opening of the new fitness center in our corporate headquarters.

In the U.S., professional fitness managers organize programs and events to encourage employees to eat well, manage their weight, exercise and participate in various fitness challenges and other special events. We also offer on-site massage therapy services at these centers at a reasonable cost to employees. Often, nonmembers can participate in the fitness centers' special programs for a nominal fee.

AUTOMATIC EXTERNAL DEFIBRILLATOR PROGRAM AND EMERGENCY RESPONSE

At many of our sites, on-site health clinic staff responds to medical emergencies while also working with volunteers who help as emergency responders. Our Global Employee Health group provides direct oversight for automatic external defibrillators and associated training, provided at many of our sites in the U.S.

CAFETERIA COLLABORATION

What we eat and drink affects our daily physical and mental well-being and our longer-term health and resilience. To contribute to a healthy work culture, we work with our on-site food vendor at most of our U.S. facilities to increase the availability and visibility of healthy food choices and to raise awareness of proper nutrition. Employees also receive discounts for healthy food purchases. In addition, many of our sites around the globe have cafeterias that offer healthy food options and nutrition education. Our food vendor is an integral partner of our *LIVE IT* team, and we jointly sponsor healthy eating events that correspond with the National Health Calendar.

HEALTH ADVOCATE (U.S.)

We partner with Health Advocate in the U.S. to help employees and their families navigate the complicated health care and health insurance system. Health Advocate is designed to make employees' lives easier by saving hours of effort, with activities such as:

- Helping to resolve complicated medical and dental insurance claims
- Finding doctors, providers and facilities
- Scheduling appointments for physicians, treatments and tests
- Securing second opinions
- Assisting with eldercare and Medicare issues
- Getting cost estimates for medical procedures
- Assisting in the transfer of medical records
- Researching and locating the latest treatments
- Locating work-life resources

The program is available to all U.S.-based employees and their dependents (other than those covered by collective bargaining agreement) at no cost, and is also available to employees' parents and parents-in-law for any health care or eldercare issues they may be facing.

PERSONALIZED HEALTH CARE MANAGEMENT SERVICES (U.S.)

We have partnered with our health plan providers in the U.S. (Aetna and Horizon BCBS) to enhance the care management our members receive, through an innovative single-nurse care model. Through this voluntary and confidential program, employees and their family members have access to a nurse who is dedicated to helping manage any chronic condition, such as diabetes, asthma and heart disease, in addition to providing support for severe and complex episodes of care, including cancer, high-risk pregnancies/NICU, transplants and infusion therapy, as well as inpatient admissions and obtaining appropriate services and treatment plans.

DISABILITY MANAGEMENT/DISABILITY ACCOMMODATIONS

The Disability Leave team and our Global Employee Health group work with external vendors in the U.S. to develop and implement short- and long-term disability management and return-to-work policies and programs. Optimizing the health and productivity of our employees is a key goal of these efforts. Our centralized Workplace EnABLEment program in the U.S. ensures that employees with apparent and non-apparent disabilities are able to be accommodated, where feasible, to enable them to work to their full potential.

BUSINESS TRAVEL PROGRAM

We are concerned about the health and safety of our employees who travel on business, especially to international locations. Our Global Employee Health group maintains up-to-date information about infectious diseases that are prevalent in all countries, and their required immunizations. Business travelers are given any required immunizations, information on health conditions in the country of their destination, a traveler's guide, a travel kit containing over-the-counter medications they may need, and an international emergency travel-assistance card. Employees may also consult with a Global Employee Health–licensed health care provider for specific travel-related prescription medications that may be needed during travel, possible preventive medical care prior to departure, information regarding the availability of medical care in the country of destination, and the possibility of medical care after return, as needed.

EMPLOYEE WELL-BEING

EMOTIONAL & SOCIAL WELL-BEING

Today's professionals are interested not only in intellectually challenging work and the opportunity to contribute to company goals, but also in finding work environments that are amenable to personal life needs and to interests that support and enhance their emotional and social well-being.

With this in mind, we have developed comprehensive work-life integration, emotional and social support programs that are innovative and that meet the needs of today's talent and employee pools, while enhancing our reputation as an employer of choice. We offer an environment that supports employees emotionally and that socially increases employee engagement and team cohesiveness in the short-term and leads to reduced absenteeism, increased productivity, and improved corporate image in the longer term.

We have instituted a broad array of programs to appeal to employees at all stages of life. Employees who manage multiple responsibilities in the home and in the workplace, employees who are caregivers to young children and/or elderly parents, employees with visible or non-apparent disabilities, and employees who have religious obligations.

GLOBAL FLEXIBLE WORK ARRANGEMENTS

We believe flexible work arrangements offer a different way of working, and have the potential to enhance employees' commitment to the company, increase productivity, and make employee teams more competitive. The company has had a flexible work arrangement policy globally since 2008.

In developing our global flexible work arrangement policy, we've challenged traditional assumptions about where and how work can and must be done. Flexibility reflects our belief that job effectiveness is determined by employee performance and results, not by the number of hours one is seen in the office. What is produced or accomplished is more important than when or where the work is done.

Employees and managers work together to assess the opportunities and challenges of a proposed arrangement. While the overall process should be collaborative, managers are accountable for making the final decision in light of business requirements, recognizing that some positions may not lend themselves to a flexible work arrangement. All regular full- or part-time employees are eligible to apply for a flexible work arrangement, which includes:

Part-Time Work: Employees' workloads and hours are reduced to less than the standard workweek requirements, along with commensurate reduction in benefits and compensation.

Job Sharing: Two employees on reduced schedules and workloads share the overlapping responsibilities of one full-time

position; benefits and compensation are reduced accordingly.

Flextime: Employees with full-time job responsibilities modify the start time and quit time of a standard day while being present for departmentally established “core hours” (hours of mandatory attendance, such as 10:00 a.m. to 3:00 p.m.), if any.

Compressed Workweeks: Employees compress full-time job responsibilities into fewer than five days per week or 10 days per two weeks.

Telework: Employees fulfill full-time job responsibilities up to several days a week at sites other than their primary location—usually their home or a satellite office.

Remote Work: Employees fulfill full-time job responsibilities working primarily as home-based or mobile employees, with limited presence in a regular company facility.

Summer Hours: The Summer Hours program offers U.S. employees an additional resource in our flexible work schedule portfolio. Specifically, eligible employees are able to work nine-hour days Monday through Thursday, and the final four hours on Friday (departing no earlier than noon).

Other: Other options, including hybrid arrangements, seasonal work, and project-based approaches, may also make business sense. Employees and managers are encouraged to consider and pilot other alternatives.

RESOURCES FOR LIVING (EMPLOYEE ASSISTANCE AND WORK-LIFE SERVICES PROGRAM)

We recognize that our employees’ lives are busy—filled with priorities, commitments and tasks—and that when our employees are doing so much, *any* challenge—whether big or small, can create stress or disrupt life. Consequently, in early 2016, our company introduced “Resources for Living,” an employee assistance and work-life program that supports our employees and family members in all aspects of their lives. The introduction of this global program expanded support from 18 countries to all 80 countries where we have a presence.

The key services of Resources for Living (provided in local languages) include:

- In-the-moment telephonic support for daily parenting questions, relationship challenges, work issues, and everyday stress
- Professional counseling sessions for personal, family, or emotional issues (up to five telephonic, face-to-face, or video sessions [in the U.S. only] per person per issue)
- Work-life services for everyday help with everyday needs, such as finding assisted living for aging parent(s) or locating a service provider for common household needs
- Crisis support for unanticipated events

Resources for Living is available at no cost to all employees and their family members 24 hours a day, seven days a week, and is confidential except as required by law.

SOCIAL CONNECTEDNESS

Connecting to others socially—both in and out of the office is an important component of being well. Our company offers a variety of ways for our globally dispersed employees to connect. Our Sync news portal provides company news at the enterprise level and also offers the flexibility of local content in native languages. In addition, through divisional, functional and organizational communities, employees can join various online forums to collaborate with their colleagues, learn more about topics of interest to them, and gain insights from other employees.

Our 10 Employee Business Resource Groups (EBRGs) are foundational to building a diverse workforce for people of all backgrounds across race, gender, ethnicity, culture, age, disability, religion, gender identity, gender expression, and veteran status. More information about our EBRGs is available here.

Through our company’s Global Employee Volunteerism Policy, employees are provided with an opportunity to take up to 40 hours of paid time off each year to engage in a variety of volunteer activities that support eligible nonprofit organizations. Learn more.

Thoughtful Communication with Employees and Managers

To ensure deep and broad-scale awareness of all our programs, our company uses a thoughtful, integrated communications approach to help all employees manage work-life integration. We provide training to managers in helping employees find new ways of working to achieve business goals, while supporting employees' work-life effectiveness and we use internal communications, employee networking events, mentoring and leadership-development forums to maintain high levels of employee morale, enthusiasm and productivity.

Time Off and Leave Policies
For U.S.-based employees not subject to a collective bargaining agreement, we offer paid time off, leaves of absence and other benefits to help employees manage work-life issues. They include:

- **Vacation, Holiday and Year-End Shutdown:** We provide employees with fixed holidays, year-end shutdown days and a set number of paid vacation days to use throughout the year based on years of service, or on work experience for new hires
- **Parental Leave:** Employees get one week of paid parental leave for the birth or adoption of a child
- **Childcare Leave:** Employees receive unpaid, job-protected leave to care for a newborn child, adopted child or child placed in foster care within six months (182 days) following the child's birth, adoption or foster-care placement

Other Programs to Support Employee Emotional and Social Wellbeing
Our company offers many programs to help make it easier for employees to balance their various responsibilities. The following are a sampling:

- **Transportation Services**: Free commuter/shuttle services from specific locations near our headquarters in Kenilworth, N.J., USA, and other locations enable employees to save on transportation costs and commute time while reducing their carbon footprint. Transit and parking reimbursements are also available at various locations.
- **Backup Dependent Care**: Temporary backup dependent-care services for employees are provided by LifeCare, for children and adults, when employees are scheduled to work and their regular care arrangements are unavailable. Employees are eligible for 10 days' usage per dependent per year for a nominal out-of-pocket fee. Employees can also take advantage of significant online resources.
- **Child Care Support**: Our company offers several on-site or near-site child care centers that enable employees to be close to their children during the work day. Recognizing not all employees work at a site with a company-sponsored childcare facility, we have made arrangements with several national childcare providers to offer discounts to employees on their eligible regular tuition.
- **K–12 Educational Guidance**: College Coach is an educational counseling service for dependent children ranging from kindergarten to grade 12 that offers a comprehensive menu of education topics and helps employees manage their professional and family responsibilities through live webinars, online support and personalized counseling. The program helps employees and their families reach their academic goals—reducing stress and keeping employees happy and productive, both at home and at work.
- **Special Needs**: The Autism Spectrum Disorder (ASD) Program is for employees and their children as they plan for and navigate school and college options for students with diagnosed ASD and related conditions. Once qualified, employees can receive personalized counseling and participation in one live webinar.
- **Adoption Assistance**: This program provides employees with reimbursement of up to $10,000 for eligible adoption-related expenses.

For U.S.-based employees who are subject to a collective bargaining agreement, work-life benefits may be offered in accordance with the agreement. For employees based outside the U.S., the work-life benefits offered differ by location and may be subject to a collective bargaining agreement or local legal requirements.

We believe it is critical not only to focus on improving an employee's physical, emotional and social wellbeing.

We must also help employees achieve financial well-being, thereby reducing stress and distractions in the workplace and contributing to increased worker productivity and loyalty. According to the Society of Human Resource Management's 2014 study '"Financial Wellness in the Workplace," 24 percent of employees say personal financial issues are a distraction at work, and 39 percent say they spend three or more hours each week thinking about or dealing with issues related to their personal finances.

Human resources professionals go even further: Seven out of 10 indicate that personal financial challenges have an impact—in some cases a large impact—on their employees' performance.

GRI G4-EC3

GRI G4-LA2

One of the guiding principles of our company's benefits program is that it is designed to protect employees from financial hardship. We do so by providing access to health benefits (with out-of-pocket maximums in the U.S. that vary by pay level), and life, disability and accident insurance to protect employees and their families if the unexpected happens. In addition, we provide various defined-benefit and defined-contribution plans around the world to help employees plan for a secure retirement.

In the U.S., our retirement plans are specifically designed to provide an opportunity for each employee to save at least 15 percent of total pay each year, through a combination of his/her 6 percent contribution to the company's 401k savings plan, the company's 401k savings plan matching contribution and the U.S. retirement plan. Saving 15 percent of total pay each year is important, as most financial experts agree that is the required savings rate to achieve a comfortable retirement.

GRI G4-EC1

Employees and Compensation

	2011	2012	2013	2014	2015
Number of Employees (approximate)	86,000	83,000	76,000	70,000	70,000
Total compensation paid to employees/payroll, including benefits (in billions)	$8.8	$8.3	$7.7	$7.4	$7.5

As part of the Resources for Living program, all employees globally have access to a free initial consultation with a financial planner for a variety of issues, such as budgeting, debt, retirement, college funding, buying vs. leasing, mortgages/refinancing, financial planning and tax considerations.

In the U.S., we also offer the Ernst & Young (EY) financial planning benefit, at no cost to employees. This benefit is available to employees in need of personal financial planning assistance. EY planners are available to help reduce financial stress by assisting with topics ranging from cash flow, credit card and debt management, retirement savings and investing, education funding, and more.

EMPLOYEE WELL-BEING

EMPLOYEE SAFETY

MAIN

As a global health care company, we strive to provide a safe and healthy workplace.

We remain committed to providing a safe and healthy workplace for our employees and contractors and complying with all applicable safety laws and regulations. We seek to eliminate work-related injuries, illnesses and unplanned events from our operations through comprehensive safety programs that are part of our Environmental, Health & Safety (EHS) management system. We also strive to minimize the frequency and severity of safety and environmental incidents by focusing on proper facility design, process controls, operation and maintenance procedures, protection systems and emergency response capabilities.

Our global safety program is designed to drive a “mindset shift” and reinforce the link between our leadership behaviors and our safety and environmental objectives. We believe that through visible management, leadership and employee engagement, we can increase the awareness of hazards and help employees make the right choices when it comes to safety, health and the environment—both on and off the job. We also promote a strong safety culture at our sites through active safety committees that drive program implementation and address safety issues collaboratively between management and employees.

For consistency across the company, and to enable us to compare our injury rates with those of other multinational companies, we use the U.S.-based Occupational Safety and Health Administration (OSHA) record-keeping criteria for recording and tracking work-related injuries and illnesses. We require that all recordable injuries, illnesses and incidents involving our employees be reported and investigated to determine their cause. We also require that actions be taken to prevent recurrence. Our injury and illness data are consolidated into a central system, enabling us to analyze trends and, together with leading indicator information, focus our efforts to continually improve. We also take steps—through internal safety alerts and bulletins—to communicate significant incidents, near-miss events and conditions that could represent risks at our other operations and sites.

Click here for EHS governance, roles and responsibilities.

PROGRAMS

We are committed to providing a safe and healthy workplace for all of our employees.

PROCESS SAFETY

Our Process Safety program identifies and controls risks associated with our human and animal health production operations. This program applies not only to operations that are subject to process safety regulations, but also to our pilot plants, manufacturing operations and utility areas where process hazards may exist. In addition, we have implemented a structured chemical-reaction-hazard review program for our research laboratories.

Early in product development, we conduct chemical reaction and thermal testing of our intermediate materials and products to identify potential reactivity, fire and explosion hazards and environmental risks. This testing continues throughout the product life cycle to assure that we are aware of and can appropriately manage process risks. Global process safety professionals work with operational and engineering personnel to conduct process-hazard analysis (PHA) and hazard and operability (HAZOP) studies to thoroughly review our operations. These structured reviews take place during process design and start-up and throughout the process lifecycle, to ensure that our facility design, equipment, operating controls and maintenance procedures are effective in controlling process hazards.

NON-ROUTINE HAZARDOUS WORK

In recognition of industrial safety trends and our own internal Environmental, Health & Safety (EHS) audit observations, we have refined our global approach to managing safety during non-routine maintenance and repair activities. Across the industry, these work activities are a leading cause of serious and fatal injuries. We have revised our global safety procedures, and the related employee training and safety equipment requirements, to reduce the potential for serious incidents when working on or near machinery, piping and electrical systems; working at heights; and entering confined spaces. This global effort is focused on creating a more rigorous and error-free approach to performing these work activities in a safe manner.

CAPITAL PROJECTS CONSTRUCTION SAFETY

We have a strong Construction Safety program with a focus on zero harm to people, property and the environment. We educate and coach our capital project construction contractors on environmental, health and safety fundamentals, and the need to drive continuous improvement in the safety culture of our construction partners. Our global engineering group has adopted Hearts and Minds™, a culture-based and behavioral program that promotes safety as a personal value. The program has had a significant positive effect on our contractors' performance with a steady increase in leading indicator performance such as safety observations, pre-task planning and hazard assessments, resulting in a steady decrease in contractor injuries.

97% of our construction projects had zero recordable injuries

For construction projects, we use the days away, reassignment or transferred (DART) rate for assessing our construction capital projects, instead of the lost-time incident rate (LTIR). DART is commonly used in the construction industry and is

therefore an appropriate lagging indicator for our Construction Safety program.

Our 2015 construction safety recordable injury rate (RIR) of 0.87 reflects a 9 percent decrease from 2014, and our days away, reassignment or transferred (DART) rate of 0.38 decreased by 14 percent from 2014.

We achieved zero recordable injuries in 97 percent of our 2015 projects. With 3.2 million construction hours logged in 2015, we experienced recordable injuries in only 10 out of 291 projects. In 2015, global engineering construction safety logged 23,869 safety observations (both corrective and positive). Logging safety observations is an important part of the program, because it reflects worker engagement and interventions, emphasizes being observant, and identifies and prevents issues that could lead to injury events. Our Construction Safety peer reviews bring in-house engineers, contractors, Environmental, Health & Safety and other partners together for thorough project safety evaluations with lessons learned and sharing of best practices. We completed 247 peer safety reviews in 2015, covering 85 percent of the active projects in 2015 versus our target of 75 percent.

GRI G4-LA7

INDUSTRIAL HYGIENE

Our Industrial Hygiene program protects the health of our employees throughout all stages of research and manufacturing by identifying chemical, physical and biological hazards, assessing exposures, and properly controlling risks.

To protect the health of our employees, we apply a hierarchy of control measures that first seeks to eliminate or find a substitute for a hazardous material or process. When it is not possible to do so, we evaluate the feasibility of engineering controls based on the hazard and risk. Where engineering controls are not feasible, we establish effective work practice controls and use appropriate personal protective equipment. We formally evaluate existing processes and control strategies to determine whether further engineering and work practice controls are feasible. For new processes and facilities, appropriate engineering and operational controls are part of the design and installation. We verify the effectiveness of these controls after installation and ensure that they are properly used and maintained.

In 2015, we established a database of available engineering controls to make it easier for our manufacturing and research sites to identify appropriate exposure control solutions for new and existing processes and projects.

MOTOR VEHICLE SAFETY

The goal of our Motor Vehicle Safety program is to reduce both the frequency and the severity of motor vehicle injuries in our global operations. The implementation of a global motor vehicle safety standard across all markets remains an area of focus for us. Programs to support safe driving skills, behaviors and attitudes are being harmonized and reinforced across our sales and marketing groups, which operate the majority of our business-use vehicles. As we make these improvements, we are seeing a corresponding reduction in the injuries associated with vehicular collisions, both for our own employees and for those with whom we share the road.

In 2015, 22 percent of the recordable injuries companywide were motor vehicle collision–related. We saw a 7 percent decrease in the number of collisions, normalized for miles traveled in 2015, versus the prior year, and a 1 percent reduction in motor vehicle collision–related employee injuries.

ERGONOMICS

The goal of our ergonomics program is to minimize employee injuries and improve human performance and well-being in relation to job tasks, equipment and the work environment. Our priority business areas are the manufacturing, research and sales environments, where most ergonomic injuries and illnesses are related to manual material handling and repetitive motion.

Ergonomic-related injuries continue to represent about a 17 percent of our recordable injury cases globally. To minimize ergonomic risks, engineering design and work practices are reviewed and implemented at our sites. We are focusing our

efforts on the sites and operations that have the highest ergonomic risks by conducting risk assessments, implementing engineering and operational controls, providing training, communicating with employees and encouraging their participation in workplace assessments. Our goal is to improve their ergonomic awareness both at work and at home.

EMERGENCY PREPAREDNESS AND RESPONSE

We prioritize the prevention of incidents through equipment and facility design, operational and maintenance procedures, and employee training. Because we recognize that incidents can and may still occur, our EHS standards require emergency response capabilities at all of our facilities worldwide. Our priorities for emergency response include ensuring the safety and well-being of our employees, preserving the environment and nearby communities, and protecting our physical assets. Site-specific emergency response procedures include incident reporting and management, personnel evacuation, medical/first-aid response and incident response and control. We routinely conduct emergency response drills and train employees in both job and site-specific emergency response duties. We develop and conduct pre-emergency planning for credible emergency scenarios such as process upsets, fires, spills/releases, severe weather and security-related incidents. Many of our manufacturing plants have trained emergency response teams and mobile fire and rescue apparatus that respond to on-site fires, medical emergencies, technical rescues and spills/releases. Many of our emergency response teams interact directly with their local community-based emergency responders and, in some cases, assist off-site when requested.

LOSS PREVENTION

Protecting our people, facilities, production processes and product supply chains from threats such as floods, windstorms, earthquakes and fires is critical to ensuring that our products reach our customers when needed without any supply interruptions. We proactively assess and manage these risks at our facilities and at several of our strategic third-party manufacturers and warehouse providers. Our loss-prevention program focuses on providing suitable facility and process designs; implementing inspection, prevention and maintenance procedures; installing fire detection and protection systems; and executing emergency response and business continuity programs to eliminate or reduce the impact of these potential loss events. We also engage the services of two globally recognized engineering service providers to routinely inspect facilities, and to review new designs and facility modifications, to ensure that we maintain a high standard of loss prevention commensurate to operational risks, monetary value and supply-chain importance. Over the past several years, we have significantly reduced our loss expectancy globally by improving our loss-prevention programs at our company as well as at strategic third-party locations.

PERFORMANCE

Our workplace injury rates have steadily improved in recent years. In 2015, our lost-time injury rate remained essentially flat, while our recordable injury rate was 17 percent lower than in the prior year.

Last year, more than half of the recordable injuries were motor vehicle- and slip-, trip- and fall-related, accounting for 22.1 percent and 28.5 percent of the total number of injuries, respectively.

Tragically, we were reminded of the critical importance of our global safety programs, when we lost one of our sales colleagues in a traffic-related accident.

Our focus on ergonomics, including workplace design showed strong signs of improvements in 2015 by reducing the number of ergonomic-related injury cases by 52 percent from 2014.

In 2015, we continued to focus our efforts towards reducing the number of slips, trips and falls among sales colleagues, where we noted an 8 percent reduction in such incidents versus the prior year.

MOTOR VEHICLE SAFETY PERFORMANCE

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CONSTRUCTION PROJECT SAFETY PERFORMANCE

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GRI G4-LA6

Global Safety Performance

Workplace Safety	2011	2012	2013	2014	2015
Recordable injury rate (RIR)	0.74	0.62	0.62	0.58	0.48
RIR percentage decrease over prior year	6%	16%	0%	6%	17%
Lost-time incident rate (LTIR)	0.30	0.28	0.28	0.20	0.22
Fatalities[1]	3	1	1	1	1
Motor Vehicle Safety					
Collisions per million miles (CPMM)[2]	9.90	10.23	12.98	13.40	12.41
Capital Projects Construction Safety[3,4]					
RIR	0.57	0.78	0.36	0.96	0.87
DART[5]	0.16	0.22	0.20	0.44	0.38
Fatalities	0	0	0	0	0

Note: Injury rates are subject to change over time, as new cases are added and case classifications change in accordance with our own requirements and applicable regulatory requirements.
[1] All fatalities were transportation-related.
[2] CPMM: Reflects both personal and business use of company-owned or -leased vehicles.
[3] LTIR/RIR: Calculated per OSHA methodology.
[4] Primarily reflects capital projects of more than $100,000 managed by our Global Engineering group.
[5] DART: Days Away, Reassignment or Transferred calculated per OSHA 300 methodology.

Lost-Time Injuries by Business Area–2015 (Total: 163)

Sales & #fsnlt;br#fsngt; Marketing: 60.2%

Manufacturing: 25.8%

Animal Health: 6.1%

Research: 4.3%

Facilities Management: 1.8%

Global Support Functions: 1.8%

Recordable Injuries by Causal Factors–2015 (Total: 362)

Slips/trips/falls: 28.5%

Motor Vehicle: 22.1%

Struck by / #fsnlt;br#fsngt;caught in: 18%

Ergonomic: 16.9%

Chemical/biological #fsnlt;br#fsngt;exposure: 6.6%

Non-ergonomic: 5.5%

Physical/environmental #fsnlt;br#fsngt;exposure: 2.5%

EMPLOYEES

GLOBAL DIVERSITY & INCLUSION

MAIN

Our company promotes and values global diversity and inclusion (GD&I) at every level of the organization—starting with the Office of the CEO—and strives for inclusiveness in every aspect of work.

The pharmaceutical industry is increasingly complex; having a diverse mind-set is not just a vision?it is a fundamental business imperative for our company. The global demographic landscape of patients and the labor markets is changing, and is now overwhelmingly female and diverse. This understanding requires a paradigm shift—what we historically have regarded as the mainstream market is, in fact, a very diverse global marketplace. Given this perspective, we are committed to evolving GD&I to create a fully integrated ecosystem where diversity and inclusion permeate our day-to-day operations and decisions, and one where business performance is exponentially enhanced by the power of inclusion.

By any measure, 2015 was an important and successful year for our company. With a strong past, we looked toward the future and revamped and launched a new comprehensive strategic plan to take us successfully into the 21st century. This plan ensures that we can attract and retain the best talent from around the world, and build an inclusive workplace where every employee can thrive and where we leverage our diversity for greater innovations in cutting-edge science.

> “’Diversity’ and ‘inclusion’ are not just abstract concepts—they are core values and strategic business imperatives that deliver business results.”
>
> Celeste R. Warren
> VP Human Resources and Global Diversity and Inclusion Center of Excellence

We employ people of varied sexual orientation, gender expression, veteran and disability status, and ethnic, cultural and faith backgrounds to help us better understand the unique needs of global patients and to create a strong competitive advantage in the marketplace. This, in turn, delivers intrinsic, long-term value to society and to our shareholders.

Interested in joining our company's mission to save and improve lives?

REVIEW OPEN JOB POSTINGS

LEADERSHIP COMMITMENT

The single most significant driver of diversity and inclusion at our company resides at the very top—with our CEO, Kenneth C. Frazier.

> "We are deeply committed to fostering an inclusive environment that embraces different perspectives and values the contributions of each individual. Having a globally and locally diverse workforce makes us a more innovative and agile company—and one better attuned to the needs of our customers, health care providers and patients who ultimately use our products."
>
> Kenneth C. Frazier
> Chairman & CEO

Our CEO publicly drives this commitment to diversity throughout all ranks of the global enterprise by:

- Signing off on executive compensation tied to recognition of diversity, in the form of bonuses, raises, stock, and options
- Personally approving diversity metrics and reviewing progress against aspirational talent goals for women and underrepresented ethnic groups
- Meeting with the company's key line leaders on a quarterly basis to review key strategic initiatives centered on global diversity
- Meeting with the company's diversity leader to discuss strategic diversity and inclusion solutions and innovation opportunities
- Approving goals and reviewing achievements for supplier diversity

By driving these initiatives across every facet of the business, we continuously seek to raise the performance bar for diversity and inclusion and drive accountability among leaders, integrating both as important drivers of our sustainable competitive advantage.

Our CEO plays an active role in communicating our company's commitment to diversity and inclusion through corporate sponsorships of national advocacy and health organizations, participation in diversity leadership events, and public keynote speeches.

In 2015, Mr. Frazier received a Lifetime Achievement Award from the Executive Leadership Council (ELC) Foundation, an organization comprising prominent African American executives.

In accepting the Lifetime Achievement Award at the "Power of One" Executive Leadership Foundation (ELF)—the charitable affiliate of the ELC, which supports its mission through education, leadership development and academic scholarships—Mr. Frazier emphasized our company's belief that expanding and building inclusive organizations are essential to advancing innovation.

"One of humanity's biggest risks is discounting someone's ideas because of their ethnicity, gender or educational background," Mr. Frazier said to the audience of 2,300 guests attending the celebration.

Executive Committee members and the Office of Diversity & Inclusion are also active on boards of nonprofit organizations, and are fully committed to GD&I as a business strategy.

- Roger Perlmutter, executive vice president and president of our Research Laboratories, most recently served as a director of several biotechnology companies and was a science partner at the Column Group, a biotechnology-focused venture capital firm.
- Adam Schechter, president, Global Human Health, serves as a board member of the National Alliance for Hispanic Health, an organization focused on improving the health of Hispanic communities in the United States and working with others to secure health for all. Mr. Schechter also serves as the executive sponsor for our company's Women's Employee Business Resource Group.
- Dr. Julie Gerberding, executive vice president, Public Policy, Global Communications and Population Health, serves as a board member for the Biotechnology Innovation Organization (BIO), the world's largest biotechnology trade association and is the chair of the Diversity Committee. Dr. Gerberding is also a co-executive sponsor of our company's Women's Employee Business Resource Group.

TALENT MANAGEMENT AND DEVELOPMENT

Building a diverse workforce and executive population, and actively promoting opportunities for people of all backgrounds across race, gender, ethnicity, culture, age, disability, religion, gender identity, gender expression, and veteran status, is indispensable to the solid business performance and outstanding patient care provided at our company. We deliver on this promise through a myriad of current and new programs seamlessly woven into the fabric of how the company operates.

Using the company's Corporate Scorecard, we ensure that the candidate selection process is inclusive of goals aspiring to diversity. Our company provides world-class leadership opportunities for employees.

TRAINING & DEVELOPMENT

Throughout 2015, we continued to invest in diversity-related training for our employees. Employees have access to diversity and inclusion programs, conferences, other activities, and professional development resources to ensure their and the company's ongoing success.

Unconscious Bias Education: Using thought leadership related to unconscious bias in the workplace, all company vice presidents and above were introduced to Unconscious Bias Education (UBE) as an enabler to identify the hidden biases we all possess and to mitigate unconscious bias in processes, practices and behaviors.

Micro-Inequities: We offer employees training options to reinforce our commitment to diversity and inclusion. One in particular, micro-inequities training, helps to create a more fully inclusive work environment by providing employees with an opportunity to learn about and avoid non-inclusive behaviors.

Executive Leadership Council (ELC): We support the ELC, an organization that provides recognition, executive seminars, peer coaching and leadership opportunities to help African American mid-career and senior-level executives with their personal and professional development.

Simmons Leadership Forum: We partner with Simmons to inspire and empower women executives. We recognize that developing the leadership potential of women executives and positioning them for success delivers a tangible competitive advantage for their organizations. In so doing, we send a strong signal to our employees that we regard developing, promoting and retaining female executives very seriously.

Women's Sponsorship Program: The goal of the Women's Sponsorship Program is to accelerate the movement and improve the readiness and visibility of high-potential women and women of color at our company so they can attain positions of greater leadership and responsibility. This two-year engagement between the sponsor and protégée is also intended to help build the network and personal brand of high-potential women leaders and to further their development and career. During 2015, 49 sponsor-protégée pairs were enrolled in the program; 67 percent were based in U.S. businesses; the remaining 33 percent were based in Asia, Europe and Latin America. Of those protégées in the U.S., 22 percent were women of color.

Women in STEMM (Science Technology Engineering Manufacturing Marketing): We hosted two Women in STEMM conferences, one in the United States and one in Prague for our women employees. The objectives of this conference were to:

- Learn how to effectively enhance leadership skills
- Introduce tools and resources to help leadership skills support career aspirations
- Grow a network of colleagues across different divisions and functions
- Understand the value women leaders provide to the future of our company

RECRUITING

We partner with organizations in both professional and academic settings to net the company a more diverse mix of capable talent. We also have several recruiting and outreach initiatives to seek and attract a diverse candidate pool.

Our initiative with the UNCF provides scholarship and fellowship support to outstanding African American undergraduate, graduate and postdoctoral students pursuing studies in biomedical research. Since the program's inception in 1995, our company has committed nearly $50 million in support, awarding more than 700 scholarships. Students also serve as interns within our company's research laboratories with our scientists serving as mentors.

We partner with Hiring Our Heroes, an organization that provides employment opportunities nationwide to veterans with disabilities. Through external media relations, the company is able to demonstrate that 80 percent of jobs in the private sector have a corresponding job in the military. Each branch of the military produces scientists, engineers, photographers and doctors, all of whom are aligned with our company's needs. To build awareness of this opportunity, we developed a special podcast, promoted on the U.S. Chamber of Commerce website, to address the benefits of hiring a veteran. Our ability to attract and retain military veterans as prospective employees was greatly enhanced through the podcast series.

In addition, our company recruits on higher-education campuses and, as part of its diversity-recruiting mission, visits institutions that have a history of serving African American and Latino students. We recognize these pools of talent to be a priority, and have allocated time and employee resources to focus on:

- Historically Black Colleges and Universities (HBCUs): e.g., Hampton University, North Carolina A&T State University
- Hispanic-Serving Institutions (HSIs): e.g., University of Puerto Rico, Rutgers

Moreover, our company has strong relationships and partnerships with the following organizations to support talent development:

- American Indian Science and Engineering Society (AISES)
- Career Opportunities for Students with Disabilities (COSD)
- National Black MBA Association (NBMBAA)
- National Society for Hispanic MBAs (NSHMBA)
- New Jersey National Society for Hispanic MBAs (NJNSHMBA)
- Catalyst—the leading women's research organization
- Hispanic Alliance for Corporate Responsibility (HACR)
- Healthcare Businesswomen's Association (HBA)
- National Urban League (NUL)
- National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCHE)
- ASCEND—largest nonprofit organization for pan-Asian business professionals
- Out & Equal Workplace Advocates—for LGBT business professionals
- USBLN?United States Business Leadership Network?driving success through disability inclusion
- Society of Women Engineers (SWE), National Society of Black Engineers (NSBE), and Society for Hispanic Professional Engineers (SHPE) university chapters

Once on board, we utilize a comprehensive approach to ensure that all new employees have ample opportunities to network, build important stakeholder relationships, learn new skills, and hear the perspectives of the senior-most people in the company to broaden their insights and knowledge. We address workplace barriers to ensure full on-boarding for all employees.

One hundred percent of our Executive Committee members are mentors, helping and enabling other company employees to achieve their full potential. In addition, many employee business resource groups (EBRGs) have developed targeted mentoring for their constituents, recognizing that culture plays a role in how careers are furthered. Specifically, our Hispanos/Latino, LEAD (League of Employees of African Descent) and Women's EBRG have formal mentoring programs.

CREATING A CULTURE OF FULL INCLUSION FOR EMPLOYEES WITH DISABILITIES

Our company understands that people with disabilities (PwDs)—apparent and non-apparent disabilities—may require workplace accommodations to enable them to contribute to their full potential. PwDs account for more than 15 percent of the world's population, are an important patient group, and control trillions in discretionary income. Moreover, as populations in developed countries continue to age and experience a greater likelihood of having disabilities, recruiting and retaining top employees at our company, regardless of disability, is not just a nice thing to do, it is a competitive necessity. Accordingly, in 2015, we launched the Global Disability Inclusion Council to uphold the spirit of full disability inclusion. The Council is embarking on a five-year strategy encompassing our company's leaders from Information Technology, Benefits, Compliance, Staffing, Integrated Health Management and Facilities.

In addition to the creation of the Global Disability Inclusion Council, we leverage a comprehensive strategic platform to address full disability inclusion, titled Workplace EnABLEment. This is the first enterprise-wide, customized disability inclusion strategy that addresses the entire spectrum of the employee experience with a strategic road map that includes recruiting, retention and advancement, the Just-in-Time manager training toolbox, an employee education program,

communications support, community outreach, supply-chain engagement, strategic alliance support, and a measurement system to track results.

We launched a self-ID campaign designed to comply with U.S. federal regulations and to reinforce a culture of inclusion by inviting employees in the U.S. and Puerto Rico to voluntarily self-identify disability, LGBT and veteran status. The program received a strong response from employees and was featured at the ILG Conference as a best practice in self-identification.

EMPLOYEE BUSINESS RESOURCE GROUP

The Employee Business Resource Group (EBRG) Executive Leadership Council was formed to help strengthen and diversify the global leadership pipeline, as well as to provide culturally relevant insights that drive innovation and our company's success. The Council is one part of a larger initiative to bring increased accountability, simplicity and focus to the GD&I model.

> "As we enter a time when our medicines and vaccines need to reach an increasingly diverse base patient population, it's important that we come together now to help our company tap into the vast amount of diverse cultural insights inside our walls."
>
> Conrod Kelly
> Associate Director, Global Marketing, Global Human Health
> Chief of Staff and African Ancestry Employee Business Resource Group (EBRG)

The EBRGs represent women, African Ancestry/Black, Hispanic/Latino, Asian/Pacific Islander, Native American/Native Indigenous, interfaith, LGBT, differently able, veteran, and millennial employees—our newest EBRG launched in 2015 with 1,400 active employee members worldwide.

Many of our senior leaders also support EBRGs as sponsors.

- Julie Gerberding, executive vice president Global Public Policy, executive sponsor for Merck's Women's Employee Business Resource Group
- Tyrone Brewer, associate vice president, Marketing Global Commercial Strategy, executive sponsor for African Ancestry Employee Resource Group
- Richard Murray, vice president, Scientific Affairs, executive sponsor for Differently Able Employee Business Resource Group
- Tony Alvarez, senior vice president, Managing Director, executive sponsor for Hispanic Employee Business Resource Group
- Sherri Motzel, executive director, Laboratory Animal Resources, executive sponsor for Native Indigenous Employee Business Resource Group
- Sandra Milligan, senior vice president, Global Regulatory Affairs, executive sponsor for Veteran Employee Business Resource Group
- Michael Thien, senior vice president, Operations, executive sponsor for LGBT Employee Business Resource Group

- Quentin Roach, senior vice president, Procurement, executive sponsor for Millennials Employee Business Resource Group
- Ken Massey, vice president of Medical Affairs, executive sponsor for the Interfaith Employee Business Resource Group
- Muna Bhanji, senior vice president, Customer Business Line, executive sponsor for the Asian Employee Business Resource Group
- Mirian Graddick-Weir, chief human resources officer, executive sponsor of the GD&I Extended Human Resources Leadership Team
- Rob Davis, chief financial officer, executive sponsor of the GD&I Business Consortium

The GD&I Business Consortium is another one of our leadership teams that was established to create a competitive business advantage and drive shareholder value. Sponsored by Rob Davis, our company's chief financial officer, the GD&I Business Consortium focused on four primary areas throughout 2015:

- Increasing the number of diverse patients in U.S. clinical trials
- Global supplier diversity
- Customer insights
- Enhancing our customer-centricity efforts through partnership with key customers on various diversity and inclusion agendas

COMMUNITY

We believe our role is to work in partnership with others—local communities, governments, donors, patient organizations, health care professionals, non-governmental organizations (NGOs), multilateral organizations, and others in the private sector—to contribute our expertise and knowledge. Learn more about our work with communities.

PERFORMANCE

GRI G4-10

GRI G4-LA12

Gender & Ethnicity

	2011	2012	2013	2014	2015
Women in the workforce[1]	51%	47%	47%	48%	48%
Women on the Board	17%	17%	17%	17%	21%
Women in executive roles[1,2]	35%	31%	31%	31%	34%
Women on the senior management team[3]	42%	35%	35%	31%	34%
Women in management roles[4]	43%	38%	37%	37%	38%
Underrepresented members of ethnic groups on the Board	11%	25%	25%	25%	21%
Underrepresented members of ethnic groups in executive roles (U.S.)	17%	17%	20%	20%	20%
Underrepresented members of ethnic groups on the senior management team (U.S.)	15%	23%	23%	15%	18%
Underrepresented members of ethnic groups in the workforce (U.S.)	29%	24%	24%	24%	26%
Underrepresented members of ethnic groups in management roles (U.S.)	19%	18%	18%	20%	23%
New hires that were female[1]	50%	45%	46%	49%	50%
New hires that were members of underrepresented ethnic groups (U.S.)	25%	27%	25%	22%	33%

Note: Our company has publicly disclosed EEO-1 information since 1999. Our 2014 data is available here.
[1] Beginning with 2012, data reported for women is global. Previously, it was limited to the U.S.
[2] "Executive" is defined as the chief executive officer and two structural levels below.
[3] "Senior management team" is defined as the fourth structural level below the CEO.
[4] "Management role" is defined as all other managers with direct reports not reflected in notes 2 or 3.

Employees and Compensation

	2011	2012	2013	2014	2015
Number of Employees (approximate)	86,000	83,000	76,000	70,000	70,000
Total compensation paid to employees/payroll, including benefits (in billions)	$8.8	$8.3	$7.7	$7.4	$7.5

OVERVIEW

ETHICS & TRANSPARENCY

Through our unwavering commitment to ethics and transparency, we earn the trust and confidence of our stakeholders.

Material topics: Corporate Governance, Distribution of Profits, Ethics in Sales and Marketing, Human Rights, Internal Controls, Lobbying, Privacy of Patient Data, Responsible Procurement, Transparency and Reporting

GOING BEYOND REQUIREMENTS IN CORPORATE DISCLOSURE TO BUILD TRUST WITH OUR STAKEHOLDERS

We aspire to be open and transparent about how we operate in order to earn and retain the trust and confidence of our customers, employees, shareholders and other important stakeholders. We do this by proactively providing nonproprietary information about our business and how we operate, helping stakeholders to make informed decisions about our company and products.

LEARN MORE

PROMOTING STRUCTURAL ACCOUNTABILITY THROUGHOUT OUR COMPANY

We take a long-term perspective on shareholder value that takes into account our company's relationship with society as a whole, and the interests of our many diverse stakeholders. Our Social Business Investment Council, comprising senior representatives of each major division of the company, provides executive-level oversight and guidance on corporate responsibility matters.

LEARN MORE

ENHANCING OUR BUSINESS PERFORMANCE THROUGH DIVERSITY AND INCLUSION

Our business partners are identified, qualified and managed through a robust sourcing-management process that integrates supplier diversity principles at each stage. We aspire to create strategic, sustainable relationships and achieve $1B of tier-one spend with diverse suppliers, inclusive of minority-owned, women-owned, veteran-owned, LGBT-owned and disability-owned business enterprises.

LEARN MORE

ETHICS & TRANSPARENCY AT-A-GLANCE

99%

of our employees completed training on our Code of Conduct.

How we operate is as important as **what we do.**

ETHICS & TRANSPARENCY AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our Ethics & Transparency efforts. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

Key Performance Indicators

	2011	2012	2013	2014	2015
Employees trained on our Code of Conduct	90%	92%	99%	99%	99%
Substantiated allegations to concerns/issues raised	65%	60%	58%	60%	58%
Reported concerns regarding privacy practices, breaches of privacy, and losses of personal data and devices that were substantiated[1]	68%	23%	26%	18%	96%

[1] Privacy concerns include all concerns escalated to our Privacy Office about the company's privacy practices. Substantiated concerns are those that are determined to be inconsistent with our privacy standards or that involve the loss of, theft of or unauthorized access to personal data.

SALES & MARKETING

We know that doctors and patients look to us to provide accurate and balanced information about our products. We adhere to strict ethical sales and marketing practices in all of our businesses.

HUMAN RIGHTS

We believe in the dignity of every human being and in respecting individual rights. Our policies and processes, including our Human Rights Policy and our Code of Conduct, affirm our commitment to scientific excellence, ethics and integrity.

GLOBAL PRIVACY PROGRAM

We believe that trust is a core privacy value and essential to our corporate mission to discover, develop and provide innovative products and services that save and improve lives around the world.

FOR MORE INFORMATION ON ETHICS & TRANSPARENCY

LEARN MORE

ETHICS & TRANSPARENCY

OUR APPROACH TO ETHICS & TRANSPARENCY

The foundation of our strategy is our unwavering commitment to values and integrity.

GRI G4-56

All employees are expected to behave ethically and in compliance with our Code of Conduct and policies. Our Code of Conduct, *Our Values and Standards*, is the foundation of our company's ethics and compliance program.

We aspire to be the most trusted healthcare company in the world. Our values and standards are an essential part of how we build trust and confidence with customers, partners, employees, the general public and other stakeholders. We're working every day to earn trust by engaging audiences on all sides of the issues that matter, and by going beyond mandatory disclosure to proactively communicate key information in greater detail.

We disclose information through our financial and corporate responsibility reporting, through participation in voluntary efforts such as CDP, through the media, and through one-on-one stakeholder discussions.

Ethics and compliance training is an important part of creating a strong culture. The Global Compliance Training Series (GCTS) portfolio of required fundamental courses helps build awareness of the company's Code of Conduct, policies, and the legal and regulatory requirements applicable to our business. The GCTS courses are mandatory for targeted employees.

COMPLIANCE

As part of our long-standing commitment to ethics and good corporate citizenship, we adopt policies and procedures to facilitate compliance with the laws and regulations that govern the way we market and sell our medicines, vaccines and other products.

We have a well-established global compliance program that is consistent with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Practice requirements, as well as other applicable regional or country industry codes of conduct, including those issued by the Pharmaceutical Research and Manufacturers of America (PhRMA) and the European Federation of Pharmaceutical Industry Associations (EFPIA).

Our global compliance program is built around the core elements of an effective compliance program.

Our company's Board of Directors and senior management, including the chief ethics and compliance officer and members of the Corporate Compliance Committee, provide the foundational elements of leadership, accountability and structure to oversee the company's global compliance program. Written standards, including our Code of Conduct, compliance-related policies and procedures; education; training; and communications; reinforce the importance of ethical and compliant business practices.

The Corporate Compliance Committee meets at least four times a year to review the compliance status across the company's business divisions worldwide as part of the committee's effort to assess the effectiveness of the company's compliance program.

MAIN

How we operate is as important as what we do.

It is critically important to our patients, consumers, purchasers, health care professionals, employees and investors, and to the sustainability of our business success, that we adhere to all applicable laws and regulations, follow ethical business practices, maintain good corporate governance and treat people with respect.

We have strong management oversight, comprehensive corporate policies and procedures, and a long history of abiding by legal and regulatory requirements and promoting high ethical standards. Every employee worldwide is responsible for adhering to business practices that are in accordance with the letter and spirit of the law and with ethical principles that reflect the highest standards of corporate and individual behavior.

Our company's Office of Ethics was established over 20 years ago to protect and promote the company's values and standards on a worldwide basis by developing and overseeing global initiatives designed to deter illegal, unethical and improper behavior related to the company's business. It is responsible for ensuring that employees are aware of and trained on the Code of Conduct and corporate policies.

RESOURCES FOR EMPLOYEES

GRI G4-57

GRI G4-58

GRI G4-HR12

The Office of Ethics serves as a channel for the receipt and investigation of employee ethical and compliance-related concerns. There are multiple vehicles through which employees can contact the Office of Ethics. Employees can contact the Office of Ethics directly, by a toll-free telephone number or by email, to speak to an ethics officer or ombudsperson. Our company also provides a confidential, toll-free intake service, called AdviceLine, through a third party that offers the option for the reporting person to remain anonymous.

The Office of Ethics is also responsible for managing our Ombuds Program, which offers an additional safe haven for U.S.-based employees to discuss work-related issues without fear of retaliation. This program confidentially addresses employees' concerns mainly relating to manager or coworker relations or fair treatment. In 2015, 43 percent of the calls that the Office of Ethics received were classified as part of the ombuds process.

ADDRESSING MISCONDUCT

It is our policy to maintain a work environment where all employees are expected to report ethical and compliance concerns that are potentially inconsistent with the company's Code of Conduct and policies. Our company is committed to maintaining a process that ensures timely escalation and investigation of potential- and compliance-related concerns.

Retaliation against employees who report such concerns is a violation of corporate policy and will not be tolerated. The Office of Ethics is responsible for oversight of the global processes for managing investigations into potential ethics and compliance concerns to ensure consistent and timely resolution of potential concerns and implementation of remediation actions. When we substantiate allegations of ethical misconduct, we take appropriate disciplinary actions in order to ensure that those who were responsible are held accountable. Disciplinary actions can include dismissal from the company, issuance of final written warning letters or financial penalties. We also take appropriate steps to address any needed improvements in organizational and process controls.

We also maintain a policy that will give our company the discretion to recoup incentive payments made to employees in certain instances. This policy will apply when a senior leader engages in misconduct or fails to reasonably supervise an employee who engages in misconduct that results in a material policy violation relating to the research, development, manufacturing, sales or marketing of company products where the policy violation causes significant financial or reputational harm to the company.

ANNUAL ETHICS & POLICY CERTIFICATION

An important component of our corporate compliance program is our annual ethics and policy certification. The annual review process requires selected company employees to certify compliance with corporate policies on ethical business practices, antitrust-law compliance, and conflict-of-interest and insider trading. These employees are also expected to regulate their outside activities to avoid any conflicts of interest and certify, in writing, whether actual or potential conflicts of interest exist. Where potential conflicts are identified, the Office of Ethics will work with management to take actions to mitigate the potential conflict. In addition, all U.S.-based employees must certify compliance with our corporate policy on the effects of exclusions, debarments, suspensions and health care-related criminal convictions, reporting and screening.

CODE OF CONDUCT

Our Code of Conduct, *Our Values and Standards*, is considered to be the foundation of our company's success. These values and standards apply worldwide, wherever our company does business.

GRI G4-56

Our Code of Conduct, available in 26 languages, applies one standard of conduct to all employees worldwide.

The values and standards embodied in our Code of Conduct are designed to promote ethical business practices in a continuously evolving business environment and to deter employee misconduct. The core values included in the Code of Conduct are intended to foster:

- Compliance with company policies and applicable governmental laws, rules and regulatory requirements
- Safeguards to protect the privacy of personal information, as well as honesty and transparency in communications about our products
- Measures to mitigate potential conflicts of interest
- Prompt internal reporting of potential violations of the Code of Conduct and policies
- Employee accountability for adherence to the values and standards set forth in the Code of Conduct

ETHICS TRAINING & DEVELOPMENT

GRI G4-SO4

GRI G4-HR2

We provide training to all employees worldwide on our Code of Conduct to ensure awareness of our values and standards, as well as of a variety of associated topics such as privacy and the prevention of discrimination, human rights, harassment, corruption and bribery. Ethics and compliance content is also integrated into business and leadership development courses for managers and senior leaders on an ongoing basis. Ethics and integrity are key leadership competencies that are assessed as part of annual performance reviews and play an integral role in our decisions about employee advancement within the company.

EXTERNAL SUPPLIERS' ETHICAL STANDARDS

We abide by strict ethical standards in our own operations—and we insist on equivalent standards from our suppliers. Our Business Partner Code of Conduct is based on our own Code of Conduct, as well as on the Pharmaceutical Supply Chain Initiative's (PSCI's) Pharmaceutical Industry Principles and the Ten Principles of the UN Global Compact.

Learn more about how we work with our suppliers to uphold ethical standards.

PERFORMANCE

GRI G4-10

GRI G4-HR2

Ethical Business Practices

	2011	2012	2013	2014	2015
Employees trained on the Code of Conduct	90%	92%	99%	99%	99%
Employees who have taken the annual Code of Conduct refresher course	NA	NA	99%	99%	99%
Employees who responded to disclosure statement on Conflicts of Interest form	98%	99%	NA	100%	100%
Concerns brought to the company's attention, such as employees seeking ombuds services (most often relating to manager or coworker relations) and guidance on conflict of interest or Code of Conduct issues	873	713	624	517	484
Allegations involving noncompliance with company policy investigated	1,080	1,012	968	1,069	638
Ratio of substantiated allegations to concerns/issues raised	65%	60%	58%	60%	58%
Employees separated related to substantiated corporate policy violations[1]	NA	166	313	365	156
Employees who received written warnings as disciplinary actions resulting from a substantiated concern[2]	NA	232	269	323	148
Worldwide employees represented by an independent trade union or covered by a collective bargaining agreement	30%	31%	32%	31%	32%

NA: Not available.

[1] This data represents investigations conducted on a companywide basis.

[2] Prior to 2012, this data was not tracked on a global basis.

ETHICS & TRANSPARENCY

GLOBAL PRIVACY PROGRAM

MAIN

In all that we do, we strive to be good data stewards to balance our data needs with our responsibilities to the people and communities we serve.

Data about people—whether our employees, patients, physicians, veterinarians and other health professionals, customers, business partners, or other stakeholders—is essential to fulfilling our corporate mission and to operating our global research-intensive biopharmaceutical and animal health businesses.

Over the past 15 years, we have developed and continually improved a comprehensive global privacy program that promotes organizational accountability for privacy, data governance and data protection across our business and with our collaborative partners and suppliers. On March 1, 2016, we became the first company in the world to obtain regulatory approval in the European Union (EU) for binding corporate rules based on an existing Asia Pacific Economic Cooperation (APEC) cross-border privacy rules certified program. Our achievement demonstrated that organizations can rely on common internal standards and processes to govern international data transfers across both the EU and APEC regions to simplify their ability to address the growing regulatory challenges in this area.[1]

Our holistic approach to privacy has its origins in biomedical research ethics and the protection of participants in the research studies that we sponsor and conduct. We have adapted human subject research ethics standards for risk-benefit analysis, transparency, anonymization, coding and prior review to other activities and processes involving data about people. We also have established a set of privacy values to guide all of our privacy, data stewardship and data protection decisions. These core tenets serve as the foundational ethical framework for our comprehensive global privacy program and our compliance with the continually evolving legal and regulatory standards for privacy and data protection.

OUR GLOBAL PRIVACY VALUES

RESPECT

We recognize that privacy concerns often relate to the essence of who we are, how we view the world and how we define ourselves, so we strive to respect the perspectives and interests of individuals and communities and to be fair and transparent in how we use and share information about them.

TRUST

We know that trust is vital to our success, so we strive to build and preserve the trust of our customers, employees, patients and other stakeholders in how we respect privacy and protect information about people.

PREVENT HARM

We understand that misuse of information about people can create both tangible and intangible harm for individuals, so we seek to prevent physical, financial, reputational and other types of privacy harm to individuals.

COMPLY

We have learned that laws and regulations cannot always keep pace with the rapid change in technologies, data flows, and associated shifts in privacy risks and expectations, so we strive to comply with both the spirit and the letter of privacy and data protection laws and regulations in a manner that drives consistency and operating efficiency for our global business operations.

First established in 2001, our global privacy program was designed from inception to develop and drive innovative solutions for facilitating efficient and responsible global data access, use and transfer. Key milestones in the development of our program include the following.

2001—Established International Data Transfers—EU
In 2001, we were the first pharmaceutical company to be certified under the former U.S.-EU Safe Harbor Framework, the first multilateral government arrangement for facilitating international data transfers.[2] Our initial certification, and the annual reaffirmation of our adherence to the Safe Harbor Framework, applied to the full scope of research, manufacturing, commercial and corporate business processes. As countries in other regions adopted comprehensive and sectoral privacy and data protection laws and regulations, we expanded the principles, standards and processes enabling our certification to support compliance globally.

2007—Transparency
In 2007, we demonstrated our aspiration to being a leader in privacy transparency practices in two key areas:

- We adopted global standards for personal data security incident management in response to the proliferation of security breach notification laws.
- We began developing and publishing standardized comprehensive privacy notices for major categories of stakeholders about whom we collect, use and disclose personal information across our business. We adopted a format first proposed in 2007 for the financial services industry. This format categorizes the information in the notices to make them easier to understand, and easier for people who interact with us in multiple ways to compare our practices. Since their original publication, we have disclosed and provided examples of our practices for reporting personal information to government authorities. All of our standardized comprehensive notices are available online.

2009—International Data Transfers—Switzerland
After expanding our safe harbor policies to Switzerland and advocating for a safe harbor framework for data transfers from Switzerland to the U.S., we certified our adherence to the U.S.-Swiss Safe Harbor Framework in 2009, shortly after it became available.

2011—Privacy Risk
Consistent with our commitment to ethical standards, accountability and continuous improvement of our program, in 2011 we developed a novel quantitative approach to evaluating privacy risk and determining the impact of control effectiveness on privacy risks across our operations. We continue to refine our privacy risk strategy in preparation for compliance with the risk analysis requirements of the new EU General Data Protection Regulation (GDPR), and have been invited to present our approach at seminars and workshops with regulators and industry representatives.[3]

2012—Organizational Accountability
In 2012, we enhanced senior management accountability for privacy across our global operations by instituting an annual management privacy certification program aligned with regulatory guidance issued by Canadian regulators that year.[4] In 2014, we enhanced the certification to address key risk areas and expanded the certifier population to include additional layers of management responsible for those risks.

2013—International Data Transfers—Asia Pacific Economic Cooperation
In 2013, we became the first health care company in the world, and the second multinational company, to be certified under the new Asia Pacific Economic Cooperation (APEC) Cross-Border Privacy Rules (CBPR) system.[5] APEC CBPR certification provides a framework for organizations to ensure protection of personal information transferred from participating APEC economies.

2014–2015 – International Data Transfers – EU and APEC Interoperability
In 2014, we filed an application for approval of our global privacy program under the EU binding corporate rules (BCRs) cooperation procedure. BCRs serve as an externally enforceable code of conduct for ensuring the protection of personal information transferred between entities and across country borders within a corporate group. In March 2014, EU and APEC officials announced a referendum for facilitating approval under both systems. Our company launched its APEC CBPR/EU BCR dual-certification project in the summer of 2014 in an effort to drive interoperability in practice between the two systems by seeking to demonstrate how an accountable global privacy program can serve as the basis for approval and ongoing compliance with the requirements of both systems. Between Q4 2014 and Q4 2015, we presented progress on our case study to regulators and other stakeholders in over 10 locations across the EU, North America and Asia Pacific.

2016—First Company to Achieve EU BCR Approval Based on APEC CBPRs
On March 1, 2016, MSD became the first company in the world to obtain regulatory approval in the European Union (EU) for binding corporate rules based on an existing Asia Pacific Economic Cooperation (APEC) cross-border privacy rules certified program. Our achievement demonstrated that organizations can rely on common internal standards and processes to govern international data transfers across both the EU and APEC regions to simplify their ability to address the complex regulatory challenges to international data transfers following the invalidation of the U.S.-EU Safe Harbor Framework in October 2015.

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[1] Wandall, H., and Cooper, D. “How to Align APEC and EU Cross-Border Transfer Rules.” *Law360*, April 12, 2016. Cooper, D., and Wandall, H. “Dual certification: A tale of two frameworks.” *Privacy and Data Protection*. Volume 16, Issue 5. May 2016.
[2] https://safeharbor.export.gov/companyinfo.aspx?id=32599
[3] https://www.huntonprivacyblog.com/2015/02/05/role-risk-management-data-protection-theory-practice/; https://www.pdpc.gov.sg; https://www.truste.com/events/privacy-risk/
[4] “Getting Accountability Right with a Privacy Management Program.” https://www.priv.gc.ca/information/guide/2012/gl_acc_201204_e.pdf. Similar accountability guidelines subsequently have been issued by regulators in Australia, Colombia and Hong Kong, and the expectations for implementing accountability through a privacy management program also were included in the 2013 revision to the Organisation for Economic Co-operation and Development *Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data.*
[5] https://cbprs.blob.core.windows.net/files/APEC%20CBPR%20Compliance%20Directory_Apr_20_2016.pdf

PERFORMANCE

GRI G4-PR8

Privacy Data

	2011	2012	2013	2014	2015
Number of countries in which we conducted privacy compliance verification and risk assessment	137	137	137	137	137
Change in program control effectiveness (over 2010 baseline)	32%	37%	39%	41%	45%
Number of concerns regarding privacy practices, breaches of privacy and losses of personal data that were substantiated[1]	229	68	212	151	143
Percentage of reported concerns regarding privacy practices, breaches of privacy and losses of personal data that were substantiated[2]	68%	23%	26%	18%	96%
Number of privacy breaches requiring notification by our company to individuals or government authorities	2	0	0	1	0
Number of privacy breaches requiring notification by third parties working for our company to individuals or government authorities	3	2	1	1	3

[1] Privacy concerns include all concerns about our privacy practices escalated to our company's Privacy Office. Substantiated concerns are those that are determined to be consistent with our own privacy standards or that involve loss of, theft or unauthorized access to personal data.
[2] In 2015, because of the scope of lost or stolen devices known to be encrypted, we ceased inclusion of lost or stolen MSD devices in our incident metrics.

ETHICS & TRANSPARENCY

HUMAN RIGHTS

Human rights are an important element of our company's commitment to conducting our business in a responsible manner.

GRI G4-15

Respect for human rights is a fundamental part of our mission to discover, develop and provide innovative products and services that save and improve lives around the world. We believe in the dignity of every human being and recognize the international human rights principles embodied in the United Nations Global Compact and as defined in the United Nations Universal Declaration of Human Rights and its subsequent changes; the International Covenant on Economic, Social and Cultural Rights; the International Covenant of Civil and Political Rights; the Organisation for Economic Co-operation and Development Guidelines for Multinational Enterprises; and the core labor standards set by the International Labor Organization.

We have translated our Business Partner Code of Conduct into 26 languages.

OUR BELIEF & APPROACH

We believe in the dignity of every human being and in respecting individual rights. Our company has a number of global policies that address how we protect human rights, including our global Public Policy on Human Rights, our Human Resources Policy, our new Labor and Human Rights Policy (introduced in 2016) and our Code of Conduct, *Our Values and Standards,* which was revised in *2015*. Our company's Executive Committee is responsible for ensuring that governance processes are in place to provide oversight of the implementation and execution of these corporate policies.

Our Values and Standards outlines our responsibilities to our customers, our fellow employees, our suppliers, the communities where we live and work as well as those around the world that we serve, and our shareholders. These responsibilities represent the foundation of our company and what we stand for, and are the basis for our continued success. We seek to prevent or mitigate adverse human rights practices that are directly linked to our operations, products

or services.

OUR COMMITMENT

GRI G4-11

GRI G4-57

GRI G4-HR1

GRI G4-HR4

GRI G4-HR5

GRI G4-HR6

Our commitment is formalized and manifested through the various policies highlighted above, including our Code of Conduct and our environmental governance and management systems. With respect to our internal operations, our policies and/or Code of Conduct state the following:

- **Labor Standards:** We maintain labor standards, including hours, conditions, wages and overtime pay practices, that are in compliance with the laws of the jurisdictions in which we operate
- **Health & Safety:** We provide a safe and healthy work environment in all of our operations, regardless of their size or function
- **Freedom of Association:** We respect the right of employees to associate freely, and to form, join or not join a labor union. All employees can communicate openly with management and each other regarding working conditions.
- **Child Labor, Forced Labor & Human Trafficking:** We prohibit the use of child, forced or involuntary labor, including bonded labor, prison labor, slave labor or indentured labor, and any form of human trafficking
- **Commercial Sex Acts:** We recognize that the sex industry, even where lawful, can contribute to human trafficking and exploitation. We do not allow employees to engage in commercial sex acts.
- **Wages & Benefits:** We compensate our employees in accordance with market practice in a manner that supports their ability to meet their basic needs. We also offer our employees the opportunity to improve their skills and capabilities.
- **Diversity & Equal Opportunities:** We value diversity and strive to provide equal opportunities for all individuals
- **Privacy:** We respect individual privacy expectations and protect personal information that we collect, use and disclose in connection with our business
- **Access to Health Care:** We respect the right to good health for all people, and we are committed to leveraging our expertise to help remove the barriers that stand between patients and the health care they need
- **Communities:** We respect the human rights of our neighbors in those areas where we have operations or facilities
- **Fair Treatment:** We provide a safe and secure workplace that is free of harsh and inhumane treatment, including any sexual harassment, sexual abuse, corporal punishment, mental or physical coercion, or verbal abuse. We do not tolerate discrimination or harassment based on a person's race, color, gender, age, religion, national origin, ancestry, ethnicity, disability, sexual orientation, gender identity, gender expression, genetic information, citizenship status, marital status, military/veteran status or any other characteristic protected by law.
- **Compliance:** We adhere to local laws. When local protection is insufficient or nonexistent, we observe the more demanding standards consistent with our policies to the extent that those standards do not violate local laws and regulations.

ENGAGEMENT WITH SUPPLIERS

We use our Business Partner Code of Conduct to communicate our expectations to suppliers and external partners. The Code, which has recently been updated, is based on our own Code of Conduct, as well as on the Pharmaceutical Supply Chain Initiative's (PSCI's) Pharmaceutical Industry Principles for Responsible Supply Chain Management and the Ten Principles of the United Nations Global Compact.

We have translated our Business Partner Code of Conduct into 26 languages to help ensure that the content is widely

understood.

Learn more about environmental, labor and human rights in the supply chain.

HUMAN RIGHTS

HEALTH AS A HUMAN RIGHT

Although government has the primary responsibility for managing a health system that ensures the health of its citizens, pharmaceutical companies have a substantial role to play in realizing this right.

Health as a universal human right is recognized by the United Nations Universal Declaration of Human Rights and the International Covenant on Economic Social and Cultural Rights (ICESCR).

The role of the pharmaceutical industry in respecting and promoting health as a human right is complex. We believe that our most basic role is our core activity of discovering, developing and delivering medicines and vaccines to address unmet medical needs.

We also recognize our ethical duty to support governments in their efforts to protect the right to health by “doing no harm.” We do this in a number of ways, including by:

- Monitoring and reporting on the safety of our products
- Providing health care workers and consumers with important information on the benefits and side effects of our products
- Safeguarding the health, safety and privacy of patients involved in our clinical trials

SUPPORTING THE RIGHT TO HEALTH

Beyond these efforts, we also have the ability—and, we believe, the responsibility—to support the right to health and to effect positive change. We do this by promoting timely product registration; by helping to improve access to new medicines and vaccines; and through partnerships and public policy advocacy that seek to strengthen health care capacity and address deep-rooted and multifaceted barriers to access in ways that are aligned with our business mission and core capabilities.

Others have roles and responsibilities, too. Industrialized countries—where most research in life sciences takes place—must continue to foster innovation by funding basic research and supporting related institutions, and by recognizing the value of innovative medicines and vaccines.

Developing countries also must continue to make health care a budget priority; remove taxes and import duties on medicines that unnecessarily raise the price of medications; and limit product diversion to richer countries by price arbitragers. Emerging or middle-income countries should do the same, and should also recognize that they can and should pay more than the poorest countries for medicines, rather than take actions that remove incentives for innovation.

Our company aspires to be open and transparent about how we operate in order to earn and retain the trust and confidence of our customers, employees, shareholders and other important stakeholders.

GRI G4-SO6

We do this by proactively providing nonproprietary information to stakeholders about our business and how we operate, which will help stakeholders make informed decisions about their interactions with the company and our products.

We disclose information through a variety of mechanisms, including our financial disclosures, the publication of our annual corporate responsibility report, and participation in voluntary efforts such as the CDP (formerly the Carbon Disclosure Project), through the media and through one-on-one stakeholder discussions. As part of this commitment to increasing transparency, we also disclose information in this corporate responsibility report in the following areas:

CLINICAL TRIALS

Our company is committed to the timely registration of clinical trial information and the disclosure of clinical trials—regardless of their outcomes.

Learn More about clinical trials.

Clinical Trials Disclosures
Since 2007, we have registered at trial initiation all clinical trials in patients in which treatment is assigned that our company sponsors and conducts worldwide on www.ClinicalTrials.gov. We also disclose results from registered clinical trials of marketed products—regardless of outcomes.

Clinical Trial Results
The clinical study results of our company and Schering-Plough, previously posted on the Pharmaceutical Research and Manufacturers of America (PhRMA) Clinical Study Results Database, have been available as of December 2011 on our corporate headquarters website.

Clinical Trial Data Sharing
We are committed to the PhRMA/EFPIA Principles for Responsible Clinical Trial Data Sharing.

Learn more about our policies and perspectives:

- Procedure on Access to Clinical Trial Data
- Procedure on CSR Synopsis Posting

- External Scientific Review Board (ESRB) Charter

Scientific and medical researchers who wish to submit a proposal for access to our company's data may send an inquiry by clicking here.

Clinical Research Protocols
Effective July 1, 2011, when we submit a manuscript on a study of an investigational or an approved medicine or vaccine to a biomedical journal, we will voluntarily include the protocol and statistical analysis plan. We previously supplied this material only upon request. Upon a journal's acceptance of the manuscript for publication, we will provide the journal, at its own discretion, with the opportunity to post on its website the key sections of the protocol, including the objectives and hypotheses, patient inclusion and exclusion criteria, study design and procedures, efficacy and safety measures, the statistical analysis plan, and any amendments relating to those sections.

CDP

CDP is an independent not-for-profit organization working to drive greenhouse gas (GHG) emissions reduction and sustainable water use by businesses and cities.

CDP works with investors globally to advance the investment opportunities and reduce the risks posed by climate change by asking almost 6,000 of the world's largest companies to report on their climate strategies, GHG emissions and energy use in the standardized Investor CDP format. We have been disclosing climate information via the CDP for a number of years and more recently have participated in both its Water and Supply Chain disclosures.

- CDP Water (2016)
- CDP Climate Change (2016)

EMPLOYEE DIVERSITY

We were one of the first companies in the United States to annually disclose our Equal Employment Opportunity data and continue to do so annually.

We consider diversity and inclusion integral parts of the culture we seek to build. Learn more.

GRANTS TO MEDICAL, SCIENTIFIC AND PATIENT ORGANIZATIONS

Our company has a leadership role as a global corporate citizen in our respective industries. We believe that providing support through grants or donations to third-party medical, scientific and patient organizations is an important way to advance our mutual objectives to improve health and advance patient care.

We have robust standards and policies in place to ensure that our grants are intended for and provided in support of improving patient care, and are not promotional or likely to be perceived as being promotional in nature, or provided to induce or reward prescription of our products. Further, any grant or donation must also be permitted by and aligned with local country laws and regulations.

To learn more about our disclosure of grants inside the United States, click here.

To learn more about our disclosure of grants outside the United States, click here.

PAYMENTS TO U.S.-BASED HEALTH CARE PROFESSIONALS

As an early supporter of the Physician Payments Sunshine Act (PPSA), we believe in broad disclosure of financial relationships between physicians and the pharmaceutical industry.

In October 2009, our company began voluntarily disclosing all payments to U.S.-based health care professionals who speak on behalf of our company, about our products and other health care issues.

In April 2012, we expanded our payments report to include post-merger speaking activities related to legacy

Schering Plough, our company's medical forums and Inspire Pharmaceutical products. Learn more.

PAYMENTS TO EUROPEAN-BASED HEALTH CARE PROFESSIONALS

We will begin disclosing payments to European-based health care professionals and health care organizations in 2016.

We will begin disclosing payments to European-based health care professionals and health care organizations in 2016 in alignment with the disclosure code announced by The European Federation of Pharmaceutical Industries and Associations (EFPIA) in July 2013. Our company played a supportive role in the development and adoption of the code by the EFPIA board.

PHILANTHROPIC GRANTS AND CONTRIBUTIONS

We report philanthropic grants and charitable contributions, including contributions made through the Office of Corporate Responsibility, our company's Foundation, U.S. Global Human Health and the MSD for Mothers Program. (*Reports were updated July 2016)

Charitable Contributions Report 2Q2016

Charitable Contributions Report 1Q2016*

Charitable Contributions Report 2015*

Charitable Contributions Report 2014*

Charitable Contributions Report 2013*

Charitable Contributions Report 2012

Charitable Contributions Report 2011

Charitable Contributions Report 2010

Charitable Contributions Report 2009

Charitable Contributions Report 2008

CORPORATE POLITICAL ADVOCACY AND CONTRIBUTIONS

Our company is committed to participating constructively and responsibly in the political process. To improve access to information about our advocacy activities, we disclose our costs associated with lobbying in the European Union and the United States.

Where permitted by law in the United States, Canada and Australia, the company provides corporate political contributions, primarily to the electoral campaigns of individual candidates.

To improve access to information about our corporate political and PAC contributions in the United States, our company semiannually posts our contributions, categorized by state, candidate and amount. We post our contributions in Canada and Australia annually.

We also disclose a list of industry and trade groups of which we are members and our dues (dues that are greater than $25,000) to U.S. trade associations that are used for political purposes. We encourage all trade associations to which we belong to publicly disclose their political activities as well. Learn more.

POST-MARKETING REQUIREMENTS

We recognize the importance of providing transparent information about the status of our marketing and development activities after a product has been approved by regulatory authorities. This information can help ensure health care providers and patients remain informed about our products.

To inform the public about post-marketing activities, we will, on a quarterly basis, post information concerning post-

marketing requirements (PMRs) for U.S.-marketed products intended for human use on this website. Information will include the nature and status of the PMRs for the life cycle of a marketed product, in accordance with U.S. regulations. Information will include reference to clinical, non-clinical or pharmacovigilance studies/trials that have been identified as PMRs. Additional background on post-marketing requirements is available at the FDA website. Below are the column headings and explanations of terms found in the PDF files below of our company's PMRs. The PDF files are searchable.

2016 U.S. Post-Marketing Requirements
January

April

July

2015 U.S. Post-Marketing Requirements
January

April

July

October

2014 U.S. Post-Marketing Requirements
January

April

July

October

2013 U.S. Post-Marketing Requirements
January

April

July

October

2012 U.S. Post-Marketing Requirements
March

July

October

The following define the status used for each requirement. These definitions are consistent with those of the U.S. FDA. There may be differences in the status of the information posted to this website and that on the FDA Post-Marketing Commitments website due primarily to the differences in timing of the updates.

Pending: The study has not been initiated (i.e., no subjects have been enrolled or animals dosed) but does not meet the criterion for delayed (i.e., the original projected date for initiation of patient accrual or initiation of animal dosing has not passed).

Ongoing: The study is proceeding according to, or is ahead of, the original schedule. The FDA considers a study to be ongoing until a final study report is submitted to the FDA, as long as the activities are proceeding according to the original study schedule. If patient accrual or animal dosing has started but is not complete, and the projected date for completion of that milestone has passed, the study should be categorized as delayed.

Delayed: The progression of the study is behind the original study schedule. Delays can occur in any phase of the study, including patient enrollment, analysis of study results, or submission of the final study report to the FDA. While the original study schedule—not a revised schedule—serves as the basis for defining a study as delayed, each phase of the study will be considered in its own right. If the applicant has one delayed phase, but gets back on schedule during the next phase, the delayed status will no longer apply.

Terminated: The applicant ended the study before completion and has not yet submitted a final study report to the FDA.

Submitted: The applicant has concluded or terminated the study and has submitted a final study report to the FDA, but the FDA has not yet notified the applicant in writing that the study commitment has been fulfilled or that the commitment has been released.

Fulfilled: The applicant has submitted the final study report for the commitment, and upon review of the final study report, the FDA is satisfied that the applicant has met the terms of the commitment.

Released: The FDA has informed the applicant that it has been released from its obligation to conduct the post-marketing study because the study is either no longer feasible or would no longer provide useful information.

Column Heading	Explanation
Product Name [TRADE NAME (generic name)]	Trade name used in the U.S. market (active ingredient[s] in the drug)
Due Date	The date by which our company has agreed to a final submission relating to the post-marketing requirement to the FDA
Status (Pending, Ongoing, Delayed, Terminated, Submitted, Fulfilled and Released)	The status of the requirement at the last quarterly update (see definitions below)
Explanation of Status	An explanation is provided where appropriate.
PMR Description	

TRANSPARENCY DISCLOSURES

DISCLOSURE OF GRANTS INSIDE THE U.S.

We believe that providing support through grants or donations to third-party medical, scientific and patient organizations is an important way to advance our mutual objectives to improve health and advance patient care.

We have robust standards and policies in place to ensure that our grants are intended for and provided in support of improving patient care, and are not promotional or likely to be perceived as promotional in nature, or provided to induce or reward prescribing our products. Further, any grant or donation must also be permitted by and aligned with local country laws and regulations.

We disclose grants of more than $500 provided by the company's Global Human Health division to U.S. organizations in support of independent, accredited educational programs for health care professionals, as well as grants to patient organizations and other medical education or scientific societies/organizations in the United States, Europe, the Middle East, Africa and Canada.

We update grants to medical, scientific and patient organizations quarterly in the United States, and annually for ex-U.S. jurisdictions. We will continue to expand our disclosure into other regions as we work to build the infrastructure and systems necessary to allow us to report this information on a global basis. The following three principles guide our approach to providing financial support to medical, scientific and patient organizations:

Independence
Our company respects the independence of medical, scientific and patient organizations and refrains from using our financial support to influence the policies of organizations or to promote specific medicines.

Transparency
Our company supports transparency of financial support provided to medical, scientific and patient organizations. We believe this is an important step in building public trust with both our company and those to whom we provide support. Making our support public also enhances the visibility of our commitment to helping advance health and science.

Compliance with Local Laws
In providing financial support to medical, scientific and patient organizations, we comply with all relevant local laws and regulations.

As part of our commitment to these principles, we regularly review and update our Code of Conduct to reaffirm our mission and commitment to scientific excellence, ethics and integrity. These principles are also reflected in the company's corporate policies, procedures and guidelines, which every one of our employees is responsible for understanding and appropriately applying.

DISCLOSURES IN THE UNITED STATES

2016

Grants made in the 2nd Quarter 2016 in the U.S.

Grants made in the 1st Quarter 2016 in the U.S.

2015

Grants made in the 4th Quarter 2015 in the U.S.

Grants made in the 3rd Quarter 2015 in the U.S.

Grants made in the 2nd Quarter 2015 in the U.S.

Grants made in the 1st Quarter 2015 in the U.S.

2014

Grants made in the 4th Quarter 2014 in the U.S.

Grants made in the 3rd Quarter 2014 in the U.S.

Grants made in the 2nd Quarter 2014 in the U.S.

Grants made in the 1st Quarter 2014 in the U.S.

2013

Grants made in the 4th Quarter 2013 in the U.S.

Grants made in the 3rd Quarter 2013 in the U.S.

Grants made in the 2nd Quarter 2013 in the U.S.

Grants made in the 1st Quarter 2013 in the U.S.

2012

Grants made in the 4th Quarter 2012 in the U.S.

Grants made in the 3rd Quarter 2012 in the U.S.

Grants made in the 2nd Quarter 2012 in the U.S.

Grants made in the 1st Quarter 2012 in the U.S.

2011

Grants made in the 4th Quarter 2011 in the U.S.

Grants made in the 3rd Quarter 2011 in the U.S.

Grants made in the 2nd Quarter 2011 in the U.S.

Grants made in the 1st Quarter 2011 in the U.S.

2010

Grants made in the 4th Quarter 2010 in the U.S.

Grants made in the 3rd Quarter 2010 in the U.S.

Grants made in the 2nd Quarter 2010 in the U.S.

Grants made in the 1st Quarter 2010 in the U.S.

2009

Grants made in the 4th Quarter 2009 in the U.S.

Grants made in the 3rd Quarter 2009 in the U.S.

Grants made in the 2nd Quarter 2009 in the U.S.

Grants made in the 1st Quarter 2009 in the U.S.

2008

Grants made in the 4th Quarter 2008 in the U.S.

Grants made in the 3rd Quarter 2008 in the U.S.

TRANSPARENCY DISCLOSURES

DISCLOSURE OF GRANTS OUTSIDE THE U.S.

Disclosure of grants to patient organizations has been mandatory in Europe since March 2009. However, in Europe, the Middle East and Africa, we voluntarily began disclosing financial support to patient organizations in 2008, and in Canada in 2009.

In October 2009, our company in Europe, the Middle East, Africa and Canada, also began to disclose grants to other third-party organizations such as medical societies and scientific organizations. The information disclosed includes the organizations, the amounts received, the dates of payment and the projects for which the money was used. Disclosures include all donations and charitable contributions, grants and membership fees to professional societies or other medical or scientific organizations. We were a member of the working group to develop the European Federation of Pharmaceutical Industries and Associations (EFPIA) Code of Practice on Relationships between the Pharmaceutical Industry and Patient Organisations, which became effective on July 1, 2008.

We update grants to medical, scientific and patient organizations annually for ex-U.S. jurisdictions.

DISCLOSURES OUTSIDE THE UNITED STATES

2015

Austria

Belgium

Bulgaria

Cameroon

Canada

Côte d'Ivoire

Croatia

Cyprus

Czech Republic

Denmark

Finland

France

Germany

Greece

Gulf Region

Hungary

Ireland

Israel

Italy

Lebanon

Libya

Merck for Mothers OCR

Morocco

Netherlands

Norway

Poland

Portugal

Romania

Russia

Saudi Arabia

Senegal

Serbia

Slovakia

South Africa

Slovenia

Spain

Sweden

Switzerland

Turkey

United Kingdom

2014

Algeria

Austria

Belgium Luxembourg

Bulgaria

Canada

Côte d'Ivoire

Croatia

Cyprus

Czech Republic

Finland

France

Germany

Greece

Gulf Region

Hungary

Ireland

Israel

Italy

Lebanon

Libya

Morocco

Netherlands

OCR MFM

Poland

Portugal

Romania

Russia

Serbia

Slovak Republic

Slovenia

South Africa

Spain

Turkey

Ukraine

United Kingdom

2013

Algeria

Austria

Belgium Luxembourg

Bulgaria

Canada

Croatia

Cyprus

Czech Republic

Denmark

Egypt

EPA (English and Portuguese Africa)

Estonia

Ex-US HQ

Finland

France

FWA (French West Africa)

Germany

Greece

Gulf Region

Hungary

Ireland

Israel

Italy

Jordan

Latvia

Lebanon

Lithuania

Merck for Mothers

Morocco

Netherlands Haarlem Oss

Norway

OCP Foundation

Poland

Portugal

Public Policy

Romania

Russia

Serbia

Slovakia

Slovenia

South Africa

Spain

Sweden

Switzerland

Tunisia

Turkey

Ukraine

United Kingdom

Yemen

2012

Austria

Belgium Luxembourg

Bulgaria

Canada

Charitable Contributions

Croatia

Cyprus

Czech Republic

Denmark

Egypt

Estonia

Ex-US HQ

Finland

France

Germany

Greece

Gulf Region

Hungary

Ireland

Israel

Italy

Jordan

Kazakhastan

Latvia

Lebanon

Libya

Lithuania

Macedonia Montenegro

Morocco

MSD Europe

Netherlands Haarlem Europe

Netherlands Oss

Norway

Poland

Portugal

Romania

Russia

Serbia

Slovakia

Slovenia

South Africa

Spain

Sweden

Switzerland

Tunisia

Turkey

Ukraine

United Kingdom

2ND HALF OF 2011

Algeria

Austria

Belgium

Bosnia and Herzegovina

Bulgaria

Canada

Croatia

Cyprus

Czech Republic

Denmark

Egypt

Estonia

Finland

France

Germany

Greece

Gulf Region

Hungary

Ireland

Israel

Italy

Jordan

Latvia

Lebanon

Lithuania

Morocco

MSD Headquarters

Netherlands

Norway

Poland

Portugal

Romania

Russia

Saudi Arabia

Serbia and Montenegro

Slovakia

Slovenia

Spain

Sweden

Switzerland

Turkey

Ukraine

United Kingdom

1ST HALF OF 2011

Algeria

Austria

Belgium

Bosnia

Bulgaria and Macedonia

Canada

Croatia

Cyprus

Czech Republic

Denmark

Egypt

Estonia

Finland

France

Germany

Greece

Gulf Region

Hungary

Iraq

Ireland

Israel

Italy

Jordan

Latvia

Lebanon

Lithuania

Morocco

MSD Europe

Netherlands

Norway

Poland

Portugal

Romania

Russia

Saudi Arabia

Serbia and Montenegro

Slovakia

Slovenia

South Africa

Spain

Sweden

Switzerland

Syria

Tunisia

Turkey

Ukraine

United Kingdom

2010

Algeria

Austria

Belgium

Bosnia and Herzegovina

Bulgaria and Macedonia

Canada

Croatia

Cyprus

Czech Republic

Denmark

Egypt

Estonia

Finland

France

Germany

Greece

Gulf Region

Hungary

Iraq

Ireland

Israel

Italy

Jordan

Kazakhstan

Latvia

Lebanon

Lithuania

Morocco

Netherlands

Norway

Poland

Portugal

Romania

Russia

Saudi Arabia

Serbia and Montenegro

Slovak Republic

Slovenia

South Africa

Spain

Sweden

Switzerland

Syria

Turkey

Ukraine

United Kingdom

MSD Headquarters

2009

Algeria

Austria

Belgium

Bulgaria

Canada

Croatia

Cyprus

Denmark

EMEAC Headquarters

Estonia

Finland

France

Germany

Ireland

Israel

Italy

Jordan

Kazakhstan

Kuwait

Latvia

Lebanon

Lithuania

Morocco

Netherlands

Norway

Poland

Portugal

Romania

Russia

Saudi Arabia

Serbia

Slovenia

South Africa

Spain

Sweden

Switzerland

Turkey

United Kingdom

2008

Algeria

Austria

Belgium

Bulgaria

Croatia

Cyprus

Denmark

EMEAC Headquarters

Estonia

Finland

France

Germany

Ireland

Israel

Italy

Jordan

Latvia

Lithuania

MSD Europe

Netherlands

Norway

Poland

Portugal

Romania

Schering-Plough

Serbia

Slovenia

South Africa

Spain

Sweden

Switzerland

United Kingdom

TRANSPARENCY DISCLOSURES

PAYMENTS TO U.S.-BASED HEALTH CARE PROFESSIONALS

We believe in broad disclosure of financial relationships between physicians and the pharmaceutical industry.

As an early supporter of the Physician Payments Sunshine Act (PPSA), we believe in broad disclosure of financial relationships between physicians and the pharmaceutical industry. In October 2009, our company began voluntarily disclosing all payments to U.S.-based health care professionals who speak on behalf of our company, about our products and other health care issues.

Updated reports are posted annually reflecting payments and transfers of value to U.S.-based physicians, including those engaged in clinical research activities. We included both direct payments to individual physicians, as well as “indirect” payments to the research entity/institution with the name of the associated principal investigator(s). The latter does not imply a direct payment to the individuals but rather support for the work that they are doing in the context of the research on behalf of their entity/institution.

We comply with the PPSA provisions of the U.S. Affordable Care Act, which requires pharmaceutical manufacturers to annually disclose information on certain additional payments and other transfers of value furnished to U.S.-licensed physicians and U.S. teaching hospitals to the Department of Health and Human Services (HHS). In addition to submitting such information to HHS’s Center for Medicare & Medicaid Services each year, we will post the information annually on this website.

SEARCH 2015 PAYMENTS >

- Payments made in 2014
- Payments made in 2013

For information regarding payments made to U.S.-based health care professionals by Cubist Pharmaceuticals, now a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, please choose a link below.

- Payments made in 2014
- Payments made between August and December 2013

THE IMPORTANCE OF ENGAGING WITH MEDICAL AND SCIENTIFIC LEADERS WITHIN THE UNITED STATES

We engage with health care professionals around the world to conduct company-sponsored clinical studies on the safety and effectiveness of our products. We conduct these studies in accordance with strict regulatory requirements with “real

world" physicians and their patients in order to learn more about our products and bring new medicines and vaccines to patients who need them. Once a product is approved for marketing, we continue to conduct studies in order to monitor ongoing safety and effectiveness.

We also engage with health care professionals through our Investigator Studies Program (MISP), whose mission is to advance the delivery of quality health care by supporting investigator-initiated original research that will enhance the understanding of disease entities and their treatment. This program is open to all academic and community-based physicians and researchers worldwide who are interested in conducting their own research.

We are committed to the discovery and development of important new drugs and vaccines through collaboration with scientific leaders from academic and scientific organizations from around the world. Advice in the form of consulting engagements with external medical and scientific experts results in meaningful, scientific exchanges that bring real-world knowledge and perspectives to our company. These critical exchanges contribute to advancing science both at our company and in the broader scientific community, and ultimately help benefit human health. We also engage physicians as speakers in the U.S. through our company's Medical Forums, which are designed to deliver balanced medical and scientific information to health care professionals so that patients can have access to the medicines and vaccines they need and use these products correctly. These programs are structured to be consistent with the PhRMA Code on Interactions with Healthcare Professionals and are conducted in compliance with FDA regulations to help ensure that our product information is presented in an appropriately balanced manner, with respect to potential benefits and risks.

MAIN

We know that doctors and patients look to us to provide accurate and balanced information about our products.

We adhere to strict ethical sales and marketing practices for all our businesses, whether pharmaceuticals, vaccines or animal health.

The best way to provide product information is for health care companies to maintain informative and ethical professional relationships with health care providers. Our interactions with providers, other customers and consumers are governed by laws and regulations, and by our long-standing global Code of Conduct. We enforce these external and internal standards through our Global Compliance Program.

We recognize that both our reputation for integrity and the trust that our stakeholders place in us are dependent on our ethical practices. Consequently, we want to make certain that the ways in which we market and sell our products to our customers—health care professionals, health insurers and governments—include accurate, balanced and useful information so that prescribers can make the best decisions for their patients. Our high ethical, sales and marketing standards require that scientific information is the predominant factor in prescribing decisions, reinforcing our reputation for providing high-quality products and for contributing to improvements in public health.

Our professional sales representatives and other employees inform our customers about our medicines and vaccines and their appropriate use. In some countries, where permitted by law, we may also directly inform patients and other consumers about diseases and available treatments that they may wish to discuss with their doctors.

We also market our products directly to consumers at times. We believe direct-to-consumer (DTC) advertising contributes to greater awareness about conditions and diseases, which can benefit public health by increasing the number of patients appropriately diagnosed and treated.

GRI G4-PR4

GRI G4-PR7

Sales & Marketing Summary	2011	2012	2013	2014	2015
Number of warning letters or untitled letters from OPDP[1] or APLB[2] in the U.S.[3]	0	1	0	0	0

[1] OPDP: Since September 2011, the Division of Drug Marketing, Advertising and Communication (DDMAC) is now the Office of Prescription Drug Promotion (OPDP).
[2] APLB: Advertising and Promotional Labeling Branch (APLB) of the FDA Center for Biologics Evaluation and Research.
[3] As of 2014, data now incorporate information from our Animal Health business.

HEALTH CARE PROFESSIONALS

Ethical relationships with health care professionals are critical to our mission of helping patients be well.

An important part of achieving this mission is ensuring that health care professionals have balanced and accurate information about our products. All of our sales and marketing activities are conducted in accordance with our Guiding Principles for Ethical Business Practices involving the Medical and Scientific Community. These principles are aligned with national regulations and worldwide industry codes, including the International Federation of Pharmaceutical Manufacturers & Associations Code of Practice and the World Health Organization's Ethical Criteria for Medicinal Drug Promotion.

The principles serve as a bridge between countries' laws and regulations, industry guidelines, and our own Code of Conduct, enabling us to interact with the medical and scientific communities, to meet our ethical and legal obligations, and to contribute to improvements in human health.

We provide promotional information in several ways, including:

- Product discussions between our professional representatives and health care professionals
- Promotional and/or educational meetings sponsored and organized by our company

We also provide non-promotional information through educational and scientific activities, including:

- Scientific presentations at medical conferences
- Support of independent continuing medical education (CME)
- Articles and related scientific studies published in peer-reviewed scientific journals
- Web-based tools such as Univadis®

Our interactions and informational materials must provide truthful, balanced and non-misleading information to health care professionals. All of our interactions with health care professionals are highly regulated by government through laws such as the U.S. Anti-Kickback Statute; the Food, Drug & Cosmetic Act; the U.S. Foreign Corrupt Practices Act (FCPA); and anti-bribery laws in other countries.

GRI G4-SO4

Our company's robust anti-bribery/anticorruption program and corporate policy give our employees the awareness and knowledge to comply with applicable laws and regulations, and to understand that the company will not tolerate any act of impropriety. Our activities must comply not only with company policies but with applicable laws, including the laws of the U.S. and other countries in which we do business.

Our program prohibits the offer, promise or giving of any payment or benefit at any time to an individual or entity for the purpose of improperly influencing decisions or actions with respect to our business. This policy applies to direct engagements (e.g., those driven by our company) as well as to indirect engagements (e.g., those managed through a third-party intermediary or partner).

We conduct anticorruption/anti-bribery training with relevant employees, which is supplemented with additional training for employees who engage with non-U.S. government officials. In many countries, health care professionals are considered government officials because of their employment by a government hospital, or are advisers or decision-makers for the

government on matters that could affect our business.

CONTINUING MEDICAL EDUCATION (CME) AND CONTINUING EDUCATION (CE) PROGRAMS

Our CME/CE Grant Program supports independent educational programs whose purpose is to maintain, develop or enhance the knowledge, skills and/or professional performance that health care professionals rely on to provide services for patients, the public or the profession. We are committed to ensuring that our CME/CE programs are educational and not promotional. Through them, we seek to increase physicians' knowledge about the latest scientific data and health care topics, thereby improving patient care.

The environment in which we sponsor or support educational programs worldwide is complex, governed by a multitude of laws, regulations, and medical or industry association guidelines. We are committed to honoring them all in the countries in which we operate.

CME programs that we support or sponsor are governed by an internal policy, and also must be aligned with appropriate standards such as the Accreditation Council for Continuing Medical Education (ACCME) standards for commercial support of CME in the U.S., the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Practice, and the standards of the European Federation of Pharmaceutical Industry Associations (EFPIA). These standards specify independence, financial disclosure and other requirements applicable to CME programs sponsored by commercial entities, including pharmaceutical manufacturers. Click here to view a list of grants of more than $500 made to U.S. organizations by our company's Global Human Health division in support of independent, accredited educational programs for health care professionals.

U.S. MEDICAL FORUMS

We deliver balanced medical and scientific information to health care professionals within the U.S. through our company's Medical Forums, which are conducted by external speakers. Speakers are selected based on their expertise in the relevant subject matter. By attending one of our Medical Forums, health care professionals participate in interactive learning on therapeutic and health care industry topics. The goal of these interactions is to help attendees achieve improved medical results for their patients.

With our strict standards for conducting these Medical Forums, we comply with the PhRMA Code on Interactions with Health Care Professionals as well as with FDA regulations, which make sure that any product presentation is appropriately balanced with information regarding the product's potential benefits and risks and is consistent with approved product labeling.

We disclose certain payments to U.S. medical and scientific professionals who speak on behalf of the company. For a list of these disclosures, click here.

OBTAINING SERVICES FROM EXTERNAL HEALTHCARE PROFESSIONALS

We engage the services of external health care professionals only when we do not have the specialized talent or expertise internally, or when an external viewpoint is critical. We ensure that compensation provided to external health care professionals is fair and reasonable, and is aligned with fair market value of the service in the home country of the health care professional providing the service.

PRESCRIPTION PRODUCT SAMPLES

Where sampling is permitted, our company has established country-specific guidance and policies on providing prescription product samples to health care professionals. This guidance specifies the appropriate distribution and use of samples to safeguard against the potential for misuse or abuse of our products, or the diversion of our products to inappropriate channels. In accordance with the law and ethical practices, we do not provide product samples to reduce or discount the price paid or reimbursed, or in exchange for prescribing, purchasing or contracting for our products or for recommending our products for formulary status.

UNAPPROVED, OR "OFF-LABEL," USE OF OUR MEDICINES AND VACCINES

In accordance with laws, regulations, internal policies and ethical practices, our professional representatives and other members of our sales and marketing team are not permitted to promote product uses that are inconsistent with the approved product label, sometimes referred to as "off-label" promotion. We have policies and training in place to address violations, and we ensure that physicians are aware that we do not encourage off-label use.

PATIENTS

We believe that direct-to-consumer (DTC) advertising can be an important and helpful way to inform patients about diseases that may be relevant to them and about therapeutic options they may want to discuss with their physicians.

We conduct such advertising only in countries where direct-to-consumer advertising is permitted. We try to help consumers achieve better health outcomes by delivering accurate, relevant and understandable information on disease prevention, identification and potential treatment. To remain true to this goal, we adhere to the letter and spirit of FDA regulations and guidelines governing DTC promotion, meet or exceed all Pharmaceutical Research and Manufacturers of America (PhRMA) guidelines on DTC advertising, and follow a comprehensive set of internal policies and practices when engaging in DTC advertising within the U.S.

Our company has a long-standing policy of voluntarily submitting new U.S.-based DTC advertising campaigns to the FDA for its review and comment before running them. Under our DTC policies and practices, the information provided in our DTC advertising must:

- Contain appropriate product benefit and risk information
- Be appropriately balanced, consistent with FDA regulations, and use appropriate "taste and tone"
- If on television, run at appropriate times of the day or night and during appropriate programs.
- Be approved by our company's Promotion Review Team (PRT), a governing body consisting of a team of reviewers (including the job owner, an attorney, a physician, representatives from the Office of Promotion and Advertising Review [for U.S.], Regulatory and a product scientific specialist) who ensure that promotional material is clinically and scientifically accurate, compliant with applicable laws and regulations, and compliant with company policy. In addition, we include information on our Patient Assistance Programs, along with a toll-free phone number for more information, in all new U.S.-based DTC print and television advertisements.

We inform health care professionals about our products before we advertise them to consumers, and we do not launch DTC advertising in the U.S. until at least six months after a new product has been approved. We also implement comprehensive programs to educate physicians and other prescribers about a new product before starting product-specific DTC broadcast advertising in the U.S. These principles and our practices are reflected in the PhRMA Guiding Principles on Direct-to-Consumer Advertisements about Prescription Medicines.

ETHICAL PRACTICES

We believe that our marketing, sales and advertising

activities make an important contribution to medicine by informing our customers of treatment options based on the most recent scientific information and findings from rigorous clinical studies.

Our sales and marketing practices are governed by external laws, regulations and industry codes of conduct, and by our own global Code of Conduct, our corporate policies and procedures, and our Global Compliance Program. Our Compliance Program seeks to prevent and address inappropriate practices, and we evaluate our policies and practices as appropriate. Our practices are monitored and compliance is enforced to ensure that our interactions with customers and consumers help inform their decisions accurately and in a balanced manner. We believe that compliance with all policies governing scientific, business and promotion-related activities, in letter and spirit, is a corporate and individual responsibility of the highest order. Through our ethical behavior, we strive to ensure that scientific information predominates in prescribing decisions.

MECHANISMS FOR FOSTERING ETHICAL SALES & MARKETING PRACTICES

The key principles of our Guiding Principles for Ethical Business Practices Involving the Medical and Scientific Community are as follows:

- We provide current, accurate and balanced information about our products; we transmit sound scientific and educational information; and we support medical research and education.
- Our employees are prohibited from offering health care professionals items of personal benefit, such as tickets to sporting events, support for office social events, or gift certificates for stores or golf outings. Where permitted, we may occasionally provide health care professionals with approved educational items that are not of substantial monetary value and that are intended primarily for educational purposes. Such materials may include medical textbooks, medical journals and anatomical models.
- Our employees and others speaking on behalf of the company may provide presentations specifically designed to provide the type of information that practicing health care professionals have indicated is needed and most useful in the treatment of their patients, in accordance with U.S. FDA regulations and the regulations of other countries in which the presentations or discussions are taking place. In connection with such presentations or discussions, occasional modest meals may be offered to attendees and must occur in a venue and manner conducive to informational communication.
- A company representative may offer occasional modest meals to health care professionals in connection with an informational presentation; however, such meals must be in accordance with local codes and regulations

Our sales representatives must provide truthful, non-misleading information in their interactions with the medical and scientific community. Our compliance program is consistent with applicable laws and regulations, and is aligned with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Pharmaceutical Marketing Practices, as well as with regional and country industry codes, such as the Pharmaceutical Research and Manufacturers of America (PhRMA) Code and the Compliance Program Guidance for Pharmaceutical Manufacturers, published by the Office of the Inspector General, U.S. Department of Health and Human Services. In addition to our global Code of Conduct and Guiding Principles for Interactions with Health Care Professionals, we have several mechanisms in place to minimize noncompliance and foster ethical promotional practices:

Hiring people with the right values, and then reinforcing those values: We look for people who believe in a value system similar to ours. In our interview process, we try to ascertain how candidates make decisions. We are interested in people who will want to commercialize our medicines and vaccines based on the merits of our products and the applicable science.

Maintaining strict control over promotional materials: Every promotional claim we make throughout the world has to be approved by our medical and legal experts for accuracy and balance, in accordance with legal requirements and ethical considerations. In the U.S., we also submit new promotional materials for new-product approvals and new indications to the FDA prior to use.

Ensuring strong medical, legal and compliance oversight: Our medical, legal and compliance teams are active partners

who foster ethical promotional practices, helping to achieve business goals by reducing risk and increasing compliance with the laws and guidelines in a highly regulated environment. Our medical, legal and compliance teams are also involved in ensuring that the sales force provides balanced information to physicians and health care decision makers.

Implementing a promotional approach that reflects customer input: Our sales and marketing teams actively seek input from health care professionals, consumers and payers to understand their needs regarding our common goal of improving patient outcomes. We incorporate their feedback into training efforts and promotional activities in order to build trustworthy partnerships with our customers and to achieve our common goal.

Enforcing a performance management system that rewards ethical behavior: Our companywide annual performance management system considers not only what an employee has achieved but also how he or she has done so, with a specific focus on ethical behavior.

Working to raise marketing standards industrywide: We are active on numerous industry association committees that address marketing standards.

Conducting continuous oversight, monitoring and risk assessment: We conduct ongoing oversight and monitoring of our key risk areas and of any activities that have been identified through our annual risk assessment process.

INTERNATIONAL MEDICAL MEDIA STANDARDS

The review and approval of global promotional and educational materials for health care practitioners follow a comprehensive and strict process, as outlined in the International Medical Media Standards (IMMS) guidance document. The IMMS principles are followed by our employees on a worldwide basis, and define the concept of fairness and balance in the communication of scientific/educational information. All such materials are reviewed and approved by medical and legal personnel, captured in a global database, and assigned a unique identifying number and expiration date. All regional and country medical personnel involved in the review and approval of promotional/educational material receive comprehensive training on corporate policies, the IMMS, the medical-reviewer role, and the required database functionalities.

TRAINING

As a condition of employment, all of our sales and marketing employees are required to be certified periodically on sales and marketing practices.

In the U.S., for example, employees who do not satisfactorily meet these training requirements may not conduct specific activities on their own and must complete the training again until they meet the requirements.

All new employees receive training and testing and must be certified on relevant policies and our company's ethical operating standards. And although many of our employees who market and sell our medicines and vaccines have advanced scientific or medical degrees and backgrounds, all of our sales representatives must complete general sales and product training. Training is specific to the country where an employee is based and covers the scope of the employee's responsibilities in ensuring compliance with applicable laws and regulations.

Sales representatives in the U.S. are required to understand, among other things, their responsibilities under the Anti-Kickback Statute, the U.S. Prescription Drug Marketing Act, and all applicable FDA promotional regulations. Sales representatives are trained on anti-bribery and anticorruption laws such as the U.S. Foreign Corrupt Practices Act (FCPA) and the U.K. Bribery Act.

After this initial training, we require periodic training aimed at recertifying employees on relevant policies and practices according to local and functional requirements. In addition to mandatory training on our Code of Conduct, employees receive training on other levels of business practices and compliance, according to their roles and responsibilities. We evaluate and update the content for all marketing and sales training periodically to ensure that it remains relevant and current.

INDUSTRY CODES OF CONDUCT

The pharmaceutical industry as a whole recognized that more needed to be done to address concerns raised by public officials and stakeholders in the health care community. Self-regulating industry codes of conduct such as the IFPMA, EFPIA and PhRMA codes set the standards that govern the industry's sales and marketing practices and ensure that companies have adequate policies and procedures in place to comply with the codes.

KEY COMPONENTS OF THE PHRMA CODE

Among the PhRMA Code's key components is an annual requirement for company CEOs and chief compliance officers to certify personally that they have processes in place that foster compliance with the Code. The Code also encourages companies to obtain third-party verification of their compliance policies and procedures. We have completed PhRMA Code certification in each of the last four years.

Other requirements of the Code have previously been incorporated into our already strong ethical business practices. For example, the company follows the standards for commercial support of continuing medical education established by the Accreditation Council for Continuing Medical Education (ACCME), and our Compliance Program requires that company representatives be periodically assessed to make sure they comply with relevant company policies and standards of conduct.

ETHICS & TRANSPARENCY

PROCUREMENT & SUPPLIER RELATIONS

MAIN

WE HAVE AN EXTENSIVE NETWORK OF SUPPLIERS AROUND THE WORLD.

The Procurement and Supplier Management function is responsible for maintaining the standards by which third parties are identified, qualified and managed. Supplier selection and management follow a robust sourcing management process, in which Supplier Diversity principles are integrated throughout each stage.

PROCUREMENT PRACTICES

GLOBAL SUPPLIER DIVERSITY

Our core values are driven by a desire to improve life, achieve scientific excellence, operate with the highest standards of integrity, expand access to our products and employ a diverse workforce that values collaboration. Economic Inclusion & Supplier Diversity (EI&SD) is an inclusive and integrated process that supports our corporate vision. We aspire to create strategic, sustainable relationships and achieve $1B of tier-one spend with diverse suppliers, inclusive of minority-owned, women-owned, veteran-owned, LGBT-owned and disability-owned business enterprises. We are also devoted to growing small businesses through subcontracting opportunities.

We have increased our spend with diverse suppliers by 18 percent, and with small businesses by 7 percent, compared to 2014.

Our company's EI&SD process has transformed over the past couple of years to greater scale nationally and globally. Responsibility has expanded vertically and horizontally through all levels of the organization. Awareness and education has transitioned to the regular practice of inclusion processes with top level accountability and goals. Although EI&SD is managed under the Global Supplier Management Group (GSMG), senior and executive level corporate commitment has brought forth a heightened sense of importance and value. This commitment is reflected in our Global Diversity & Inclusion (GD&I) strategy.

The GD&I Business Consortium's objective is to enhance our business performance through diversity and inclusion, creating a competitive business advantage and driving shareholder value. EI&SD participates on the Consortium and is one of four target areas focused on increasing business performance through diversity and inclusion. The GD&I Business Consortium is chaired by the VP, Customer Centricity and supported by the VP MMD HR and GD&I Center of Excellence (CoE). The Executive Sponsor of the team is our company's Chief Financial Officer.

In 2014, the EI&SD CoE established the Supplier Diversity Strategy Council (SDSC) which comprises sourcing leaders globally from all categories of source-able spend. The SDSC convenes once a month to share information, identify opportunities, develop solutions and plan next steps. In 2015, the SDSC and respective sourcing teams took a more strategic approach to inclusive procurement and built category roadmaps accompanied by execution plans for 2016 implementation and beyond. This preparation and forecasting has resulted in the building of a foundational practice that we believe will deliver sustainable, innovative and transformative solutions that contribute to shareholder value.

Our goal is to achieve $1B of tier-one spend with diverse suppliers in 2016.

From a global perspective, we have named EI&SD representatives for each of our global markets: Canada, Europe, Middle East and Asia (EMEA); South Africa, Asia Pacific and Japan (APJ) and Latin America. Our global EI&SD representatives are involved in our strategic planning and are responsible for ensuring alignment in their respective markets with the company's sourcing inclusion practices. In 2015, we established goals for Canada and EMEA and built strategies for South Africa, APJ and Latin America. In 2016, each global market will have measurable goals in its objectives.

We aspire to go beyond just providing opportunity by trying to prepare, counsel and contribute to capacity building within diverse-owned business enterprises with a goal of leveling the playing field for fair competition. Our Supplier Development & Performance Management (SD&PM) team performs supplier technical capabilities assessments and creates development plans to improve suppliers' performance in quality and operations and also develops suppliers' business as a whole. SD&PM has expanded their scope from predominantly direct manufacturing suppliers to include diverse suppliers in external manufacturing and are assiduously evaluating opportunities within indirect procurement including logistics.

In May, 2015, our company held our first Economic Impact Summit in Newark, New Jersey, USA. The Summit focused on "Building Supplier Capacity to Cultivate Opportunities for Success." More than 100 people were in attendance, including representatives from more than 40 diverse-owned businesses as well as representatives from our company. Our chief procurement officer and senior vice president of global supplier management and global supply business development groups kicked off the Summit with a breakfast and our executive vice president and president of our manufacturing division

was the keynote speaker.

We seek to do business with qualified small and diverse suppliers. In addition to hosting the Summit, we actively participate in over 30 external global events and conferences. We purposely identify different sourcing leads to attend conferences and matchmaker meetings based on the need and upcoming bid opportunities. This provides an opportunity for our sourcing leads to further develop through training, correspond with sourcing leaders from other companies and network with suppliers. It also offers potential suppliers the chance to connect with decision makers and influencers in their areas of expertise. Our outreach has led to more supplier relationships, knowledge transfer, increased inclusive practices and ultimately more business for diverse suppliers.

In 2014, we spent approximately $805M with diverse suppliers and $529M with small, small disadvantaged, small women-owned, small veteran and disabled veteran-owned, and historically underutilized business zoned (HUBZoned) companies.

In 2015, we spent:

- $953M with diverse suppliers, an annual increase of 18 percent
- $568M with small businesses, an annual increase of 7 percent

Our 2016 corporate goal is to achieve $1B of tier-one spend with diverse suppliers. To achieve this goal, we have raised our level of accountability to our Executive Committee.

While 2015 has proven to be a successful year, we remain committed to being a catalyst for change and understand that diversity of our workforce and within our supply chain is a distinguishing factor for innovation and competitiveness in a global market.

GRI G4-EN32

GRI G4-HR10

SUPPLIER AND THIRD-PARTY RISK MANAGEMENT

Third-party risk management is an enterprise-wide effort supported by Procurement, Supplier Management, the Office of the General Counsel, Compliance, and Environmental Health & Safety. Representatives from each function meet regularly to discuss, assess and manage issues that are risk drivers.

Our Business Partner Code of Conduct, along with our company's Supplier Performance Expectations, are communicated to all existing and potential third-party suppliers and are included in requests for information, proposals and quotes, supplier contracts, and purchase order terms and conditions. In addition, we participate in the Pharmaceutical Supply Chain Initiative's (PSCI) Pharmaceutical Industry Principles and are a signatory to the 10 Principles of the United Nations Global Compact. In 2015, we updated our Business Partner Code of Conduct and the contract language in our standard templates to address new and emerging potential risks, including additional expectations in the areas of employee disclosures, recruitment practices and housing standards.

Using a risk-based approach, supplier assessments and audits are conducted based on multiple factors (e.g., engagement type, geography). The assessments and audits evaluate a supplier's ability to meet both industry and our own standards for ethical business practices.

Our supplier assessments include:

- Labor and human rights
- Anti-bribery
- Anti-corruption
- Privacy and data protection
- Environmental, health and safety issues
- Quality
- Responsible sourcing of minerals
- Animal welfare

Where assessments and audits identify opportunities for improvement or deficiencies, we monitor suppliers to ensure that our concerns are addressed in a responsible and compliant manner. As part of our oversight and monitoring, we have

established mechanisms to report, track and monitor adherence to plans to address non-conformances and help drive continued improvement.

PROTECTING THE PRIVACY OF PERSONAL INFORMATION

Some of our suppliers and service providers, such as contract research organizations, market research agencies, information technology systems developers and other service providers, process personal information in connection with their performance of services for our company. We require these suppliers and service providers to provide appropriate privacy protection for personal information that they handle for, on behalf of or otherwise in connection with the performance of services for us, in accordance with our privacy policies and applicable privacy laws, regulations and guidelines.

GRI G4-LA14

GRI G4-HR1

GRI G4-HR5

GRI G4-HR6

SUPPLIER ASSESSMENT FOR LABOR PRACTICES AND HUMAN RIGHTS

In May 2015, we instituted a more formal program to evaluate the risks for labor and human rights in our supply chain. As of that date, prior to contracting all new direct suppliers (as well as selected indirect and research suppliers in certain geographies) were required to complete and return a Supplier Self-Assessment Questionnaire (SAQ) for Ethics & Compliance. Our SAQ presents suppliers with a series of labor and human rights questions covering a range of subject areas, including Freely Chosen Employment, Child Labor, Employment Practices, Employee Disclosures, Fair Treatment, Wages, Benefits and Working Hours.

Suppliers' responses are used to judge whether or not they have programs and/or procedures in place to address potential risks for labor and human rights. In 2016, we plan to expand our evaluation to include a number of our existing direct suppliers.

In August 2015, we instituted a formal audit program to evaluate supplier compliance with our company's standards for labor and human rights. Several third-party audit firms were engaged to perform independent audits at a limited number of direct suppliers' facilities.

These facilities were located in countries identified as high risk for labor and human rights. Generally, audits were conducted over a two-day period and included interviews and a review of relevant documentation. In total, 27 supplier facilities were audited in 2015. Our supplier audit program for labor and human rights is still evolving. We intend to perform additional audits during the course of 2016.

MANAGING EXTERNAL MANUFACTURERS OF OUR PRODUCTS

The company maintains strict quality standards—no matter where our products are manufactured in the world. Once we have made a decision to engage an external manufacturer, that manufacturer is required to comply with our business requirements set forth in the contract, regardless of geography.

Prospective external manufacturers of active pharmaceutical ingredients (APIs) and finished products are screened for environmental, health and safety (EHS) compliance, in addition to quality, and supply and technical competence requirements. The EHS screening includes a survey covering such topics as regulatory compliance, fatalities and major incidents.

Based on the screening results and activities undertaken by the supplier, certain external manufacturers are subject to a

more detailed on-site assessment conducted by a multidisciplinary team, which may include our company's Quality, Safety, Environmental, Technical and Procurement representatives. External manufacturers we contract with are periodically reassessed using a risk-based approach; higher-risk external manufacturers are subject to more frequent on-site assessments. We expect that any observations made during the audit process will be remediated by our external manufacturers, and we monitor and track corrective actions to completion.

We continue to support the Pharmaceutical Industry Principles for Responsible Supply Chain Management (the Principles). The Principles outline industry expectations for external manufacturers and licensees with regard to labor, health, safety, environment, ethics and management systems. The external manufacturers with which we contract are expected to understand and align with these Principles.

PERFORMANCE

External Manufacturers EHS Assessment Summary

	2011	2012	2013	2014	2015
Prospective external manufacturers	44	42	55	48	50
Current external manufacturers	27	39	45	68	69
Total assessments	71	81	100	116	119

ETHICS & TRANSPARENCY

CORPORATE GOVERNANCE

MAIN

We believe good governance is integral to achieving long-term shareholder value. We are committed to governance policies and practices that serve the interests of our company and the company's shareholders.

In exercising our fiduciary duty to our shareholders, we take a long-term perspective on shareholder value that takes into account both our company's relationship with society as a whole and the interests of our many diverse stakeholders.

THE BOARD

GRI G4-34

The primary mission of our Board is to represent and protect the long-term interests of our company's shareholders. The Board meets at minimum seven times per year and as otherwise needed to provide strategic direction and review our progress on a wide variety of measures. In overseeing the affairs of the company, including our governance, the Board has established four committees to help fulfill our obligations to our shareholders.

Kenneth C. Frazier, our company's chairman of the Board, president and chief executive officer, is the only company executive serving on the Board. As of May 24, 2016, Leslie A. Brun has been elected to serve as the Board's independent lead director. As lead director, Mr. Brun confers with management on matters involving the Board and serves as a liaison to shareholders on investor matters. Mr. Frazier is not a member of any of the Board's committees; only independent directors serve on those committees.

The Board has a balanced membership, representing a deep and diverse range of experience, expertise and backgrounds. While it is our company's philosophy that the full Board should consider and act on matters of significance, the committees assist it in carrying out its responsibilities and provide greater focus in key areas.

BOARD INDEPENDENCE & PERFORMANCE

Some shareholders believe that the Board should be completely independent. Our policy is that the Board should consist of a substantial majority of independent directors, in accordance with the standard for independence established in our Poli-

cies of the Board. As noted above, Mr. Frazier is the only member of the Board who is not independent.

GRI G4-38

For additional details on our Board's leadership structure, please see our company's 2016 Proxy Statement (pages 28–34).

CORPORATE MANAGEMENT

GRI G4-39

Our company's chairman, president and chief executive officer, Kenneth C. Frazier, is accountable to the Board. Our company's Executive Committee, an internal management committee of company executives who report directly to Mr. Frazier, meets monthly and as needed to review our progress and to attend to other matters affecting our company.

SHAREHOLDER ENGAGEMENT

We regularly communicate with our shareholders to better understand their perspectives, and have established a shareholder engagement program that is proactive and cross-functional. Throughout the year, members of Investor Relations, the Office of the Secretary, and Human Resources, along with other subject-matter experts within the company, engage with our shareholders to remain well-informed regarding their perspective on current issues, as well as to address any questions or concerns. These teams serve as liaisons between shareholders, members of senior management and the Board. This open and constructive dialogue with our shareholders has led us to make certain governance- and compensation-related changes over the past few years, including the adoption of proxy access, lowering of the threshold required for shareholders to call special meetings, and a change in the design of the long-term incentive plan. For additional details on shareholder engagement, please see our company's 2016 Proxy Statement.

COMPLIANCE

Our company's Board of Directors and senior management, including the company's chief ethics and compliance officer and the Corporate Compliance Committee, oversee our company's Global Compliance Program. Our compliance program is designed to maintain a culture that promotes the prevention, detection and resolution of potential violations of law or company policies. The program is dynamic, involving regular assessments to ensure that it is responsive to the company's evolving business and associated compliance risks. The Global Compliance Organization is led by the senior vice president and chief ethics and compliance officer, who reports directly to the chief executive officer. The chief ethics and compliance officer presents a quarterly report on the state of ethics and compliance at our company to the Audit Committee of the Board.

ENVIRONMENT, HEALTH & SAFETY GOVERNANCE

We are committed to full compliance with all environmental and employee health and safety laws and regulations, to engaging with our stakeholders concerning these issues, and to actively identifying, understanding and addressing potential environmental, health and safety (EHS) risks.

Our Executive Committee has established the EHS Council to provide enterprise-wide leadership and governance of our EHS compliance and performance. In addition to a corporate EHS policy, we are continuing to implement and sustain a robust compliance management program that effectively oversees and manages EHS issues affecting the company, in order to meet our responsibilities and commitments and to improve our performance.

RISK MANAGEMENT

Our company's Corporate Audit and Assurance Services group is accountable to the Audit Committee of the Board of Directors for assessing the adequacy and effectiveness of the company's control environment in relation to financial

reporting and operating processes. This responsibility includes the appropriate management and oversight of key company risks, in accordance with our corporate policy on audit, control and risk management.

DISCLOSURE

We are committed to a policy of full, accurate and timely disclosure of all material information in order to keep shareholders and the investing public informed about the company's business and operations. Accordingly, we have established a corporate disclosure policy that articulates the standards, processes and governance for the company's disclosure practices. Pursuant to the policy, our Disclosure Committee oversees the company's disclosure practices and disclosure obligations.

EXECUTIVE COMPENSATION

GRI G4-51

Our company's compensation programs are designed to align the interests of our executives with the interests of our shareholders. Each year, the Compensation and Benefits Committee of the Board of Directors considers the outcome of shareholder advisory votes on executive compensation when making decisions relating to the compensation of the company's executive officers, including the chief executive officer, and to our executive compensation program and policies.

In 2016, shareholders continued their strong support of our executive compensation programs, with 94 percent of the votes cast for approval of the "say on pay" proposal at the 2016 Annual Meeting of Shareholders. The Compensation and Benefits Committee believes that the voting results conveyed our shareholders' support of the philosophy, strategy and objectives of our executive compensation programs. Furthermore, we continue to engage in direct constructive dialogue with our shareholders regarding our executive compensation programs and policies to ensure that investors understand the manner in which these programs and policies support our long-term strategic objectives.

Additional information on our company's executive compensation programs, policies and practices can be found in our company's 2016 Proxy Statement.

GOVERNANCE OF OUR RESEARCH AGENDA

The Research Leadership Team, headed by the president of our company's research laboratories, develops the divisional strategy, allocates resources, and manages the research and development portfolio. The Research Leadership Team is made up of the heads of functional areas within our research laboratories. Each area provides expert support of our medicine and vaccine candidates during the discovery and development process.

SAFETY MONITORING

Our efficient global Clinical Safety and Pharmacovigilance organization collects, medically reviews and evaluates, and reports adverse experiences to global health authorities in compliance with global regulatory reporting requirements. The global product safety teams within our research laboratories are responsible for monitoring the evolving safety profile of our medicines and vaccines. In parallel, at the country level, local pharmacovigilance teams at our subsidiaries worldwide are responsible for ensuring that adverse-experience information is collected and reported to our global product safety staff at headquarters and to local regulatory authorities.

CORPORATE RESPONSIBILITY GOVERNANCE

Our Office of Corporate Responsibility identifies corporate responsibility issues that are important to our business success and to our stakeholders, and formally manages targets and performance for those issues. In addition, the Social Business Investment Council, comprising senior representatives of each major division and function of the company, provides

executive-level oversight and guidance on corporate responsibility matters. To learn more, click here.

PERFORMANCE

Corporate Governance Summary

	2011	2012	2013	2014	2015
Independent directors on the Board	16	11	11	11	13
Percentage of Board members who are independent	94%	92%	92%	92%	93%
Separate chairman of the Board and CEO[1]	Yes	No	No	No	No
Lead independent director	Yes	Yes	Yes	Yes	Yes
Independent Audit Committee	Yes	Yes	Yes	Yes	Yes
Independent Compensation and Benefits Committee	Yes	Yes	Yes	Yes	Yes
Independent Governance, Public Policy and Corporate Responsibility Committee	Yes	Yes	Yes	Yes	Yes
Number of Board meetings scheduled or held[2]	6	7	7	8	8
Shareholder support of the advisory vote on executive compensation	96.93%	97.18%	88.76%	95.81%	95.24%

[1] The roles of chairman of the Board and CEO were separate from January 1, 2011 to December 1, 2011.
[2] Meetings held in person or via telephone.

OVERVIEW

OUR GIVING

We strive to find sustainable solutions to key global health challenges and to strengthen communities where our employees live and work.

DONATING MEDICINES AND VACCINES TO UNDERSERVED COMMUNITIES AND IN HUMANITARIAN CRISES

It's not enough to discover and develop new medicines and vaccines, we also need to help get them to those in need. We do this through donations that address specific health needs, whether in communities with a fundamental lack of access to health care and services, or in acute or protracted humanitarian crises.

LEARN MORE

PARTNERSHIPS HELP TO MAXIMIZE OUR PHILANTHROPIC WORK IN COMMUNITIES

Our philanthropic investments and programs are guided by key principles and priorities. We seek to address critical global health needs, collaborate with partners, and leverage not only donations but also our expertise in the areas of global health where we have substantial expertise and capability.

LEARN MORE

FIELD-BASED LEARNING THROUGH THE MSD FELLOWSHIP FOR GLOBAL HEALTH

Our 3-month pro bono program is designed to match the skills and talents of our employees with NGOs around the world. Employees gain invaluable experience alongside NGO staff and community members as they help build organizational capacity and increase access to health services, products and education.

LEARN MORE

OUR GIVING AT-A-GLANCE

$1.7B

Total value of product donations in 2015

MSD Gives Back

Volunteer • Contribute • Connect

THE CHRONICLE OF PHILANTHROPY

#12 on the list of The 20 Most Generous Companies of The Fortune 500

OUR GIVING AND THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

The interactive graphic below indicates which SDGs we are addressing with regard to our Giving efforts. Hovering over the icons will give you a description of the goal, with links to more information.

For a list of all of the global goals which our company is working toward, and a directory of pages with our related initiatives and performance data, please visit our Sustainable Development Goals page.

Grants and Contributions Summary

	2011	2012	2013	2014	2015
Grants and contributions (total cash, in-kind and product, in millions)[1]	$1,270	$1,696	$1,860	$1,543	$1,820
Cash grants and contributions (in millions)	$73	$70	$107	$111	$133
Product donations through U.S. Patient Assistance Program (in millions)	$301	$559	$566	$433	$567
Product donations for ex-U.S. programs and U.S. disaster relief (in millions)[2]	$893	$1,067	$1,185	$997	$1,117
Valuation of employee volunteer time (in-kind, in millions)[3]	$0	$0	$2.0	$2.2	$2.9

[1] Beginning in 2013, total giving includes “in-kind” contributions.
[2] Includes our Medical Outreach Program (including U.S. disaster relief), the African Comprehensive HIV/AIDS Partnerships, the MECTIZAN® Donation Program, the GARDASIL® Access Program and MSD division and subsidiary donations.
[3] Includes valuation of volunteer time for only those employees who participated in the MSD Fellowship for Global Health, and our company’s Legal Pro Bono and other skills-based volunteer programs.

HEALTH

We aim to improve health care quality and health system capacity as well as increase access to care for underserved populations in selected areas of global health need and relevance to our company.

COMMUNITY

We provide financial support and share the expertise of our employees through grant and volunteer programs that address critical health, social and environmental issues in communities where we have a presence.

EMPLOYEE GIVING

Our employees have the opportunity to take up to 40 hours of paid time off annually to engage in volunteer activities that support eligible nonprofit organizations. We are proud of our employees’ dedication to serving others.

FOR MORE INFORMATION ON OUR GIVING

LEARN MORE

OUR GIVING

PRIORITIES & GUIDELINES

Philanthropy is an important component of our company's commitment to corporate responsibility and a visible demonstration of our efforts to improve access to health and strengthen communities where our employees live and work.

Through our philanthropic programs, we have the ability to make a positive difference in addressing complex global health challenges and improving the quality of life in communities where we have a presence.

Grant Application Guidelines

GUIDING PRINCIPLES

Several key principles guide our philanthropic investments and program portfolio. We seek to:

- Address critical global health needs where we can have a meaningful impact
- Collaborate with key partners to optimize our effectiveness
- Leverage not only cash and product donations but also expertise and capabilities across our company

GIVING PRIORITIES

Our giving priorities strengthen the effectiveness and impact of our company's philanthropy by focusing on areas of global health need in which we have substantial expertise and capability.

Our priorities are:

- Health: Improve health care quality and health system capacity as well as increase access to care for underserved populations in selected areas of global health need and relevance to our company, namely noncommunicable

diseases (NCDs) or chronic conditions in four areas: cancer, diabetes, hepatitis C and HIV/AIDS. Through our program investments, we aim to support interventions with evidence of effectiveness in advancing the quality of health services delivery, reducing health care disparities, fostering innovation in the delivery of health care, and empowering patients as active participants in managing their health.

- Community: Provide financial support and share the expertise of our employees through grant and volunteer programs that address critical health and selected social issues in communities where we have a presence.

MAIN

As a global health care company, we have a responsibility to help increase access to medicines, vaccines and quality health care worldwide.

We are committed to discovering smart, sustainable ways to expand access, especially in parts of the world where there are limited or no health care infrastructure and resources. Given the immensity of this challenge, we believe we can make the strongest contribution by working in partnership with others—governments, donors, patient organizations, health care professionals, nongovernmental organizations, academic institutions, multilateral organizations and the private sector.

We focus on select areas of global health need and relevance to our company, namely, noncommunicable diseases (NCDs) or chronic conditions in four areas: cancer, diabetes, hepatitis C, and HIV/AIDS. Our program investments in these areas focus on innovative interventions with evidence of effectiveness in improving health care quality and reducing disparities in access and health outcomes among underserved populations who are particularly burdened by these diseases.

INFECTIOUS DISEASES

AFRICAN COMPREHENSIVE HIV/AIDS PARTNERSHIPS (ACHAP)

In 2000, together with our company's Foundation and the Bill & Melinda Gates Foundation, we established the African Comprehensive HIV/AIDS Partnerships to support Botswana's national HIV/AIDS strategy for preventing new HIV infections and reducing morbidity and mortality associated with HIV/AIDS. Our funding of ACHAP concluded in 2014.

CHINA-MSD HIV/AIDS PARTNERSHIP (C-MAP)

This partnership between our company's Foundation and China's Ministry of Health is focused on strengthening integrated HIV treatment capacity in Sichuan Province's Liangshan Prefecture, Chongqing Municipality and Fujian Province. C-MAP aims to improve the quality of HIV/AIDS management and treatment services as well as to expand overall treatment

coverage.

HIV CARE COLLABORATIVE

To help improve HIV care in the U.S., our company's Foundation established the HIV Care Collaborative for Underserved Populations in the U.S. This initiative was established to support the efforts of local health departments in Atlanta, Georgia; Houston, Texas; and Philadelphia, Pennsylvania to connect more people living with HIV to the care and treatment they need to stay healthy. This initiative concluded at the end of 2015.

POPULATION SERVICES INTERNATIONAL (PSI)—HCV PREVENTION AND CAPACITY-BUILDING PROGRAM IN VIETNAM

With a three-year (2013–2015), $650,000 grant from our company, PSI implemented a program in Vietnam to strengthen capacity in hepatitis C (HCV) prevention across multiple health care sectors. This program helped to improve access to HCV-prevention information and education among at-risk populations to help motivate the adoption of HCV-preventive behaviors. Through advocacy and capacity-building efforts, this program also helped to raise awareness and build support for the expansion and integration of HCV-prevention services into national public health programming. Over the course of the three-year project, PSI reached more than 27,740 at-risk individuals with HCV-prevention education and information through a series of outreach events and face-to-face communications.

During 2014, PSI initiated the development of an HCV provider training curriculum in collaboration with the National Hospital of Tropical Disease (NHTD) to serve as the national curriculum for HCV training. This training curriculum was approved in 2015 by Vietnam's ministry of health. At the outset of the project, PSI also collaborated with the NHTD to design and implement an HCV Prevention Master Training program. Following this training, master trainers trained HIV service providers from project provinces (Thai Nguyen, HCMC, and Nghe An) on how to integrate HCV prevention counseling and referral for diagnosis and treatment into their routine HIV services delivery. Over the course of the project, 52 HCV master trainers and 562 HIV service providers received training.

Over the course of the three-year project, PSI reached more than 27,740 at-risk individuals with HCV-prevention education and information.

PSI also implemented various community events designed to attract and engage members of at-risk communities by offering free haircuts or free motorbike washing while individuals received HCV prevention counseling. Data collected before and after the haircut-day events revealed a substantial increase in the percentage of participants who perceived themselves to be at risk of HCV, from 14 percent prior to attending a haircut-day event to 100 percent after-participation in a haircut-day event. These events reached more than 3,770 individuals at risk of HCV.

NONCOMMUNICABLE DISEASES (NCDS)

ALLIANCE TO ADVANCE PATIENT-CENTERED CANCER CARE

With funding from our company's Foundation, the Alliance is seeking to increase timely access to patient-centered care and reduce disparities in cancer care, especially for vulnerable and underserved populations in the United States. Learn more.

ALLIANCE TO REDUCE DISPARITIES IN DIABETES

With funding from our company's Foundation, Alliance program partners worked to decrease disparities in diabetes outcomes and improve the quality of health care for underserved adults living with or at risk for diabetes in five communities in the United States: Camden, New Jersey; Chicago, Illinois; Dallas, Texas; Memphis, Tennessee; and Wind River Reservation, Wyoming. Learn more.

AMERICAN CANCER SOCIETY – PATIENT NAVIGATION PROGRAM

With a four-year (2015–2018), $1.58 million grant from our company's Foundation, the American Cancer Society (ACS) is implementing a comprehensive Patient Navigation Program in the United States to enhance care coordination, promote patient activation and increase access to high-quality cancer care in three communities where substantial health care disparities exist. The program sites that the ACS has selected to participate in the community-based program include the Queens Hospital Center in Queens, New York; the Phoenix Cancer Center/Maricopa Integrated Health System in Phoenix, Arizona; and the University of New Mexico Cancer Center in Albuquerque, New Mexico.

This program aims to:

- Support patients in overcoming barriers to diagnostic services and timely initiation of treatment
- Empower patients with the information and skills to more actively engage in their health care, treatment planning and shared decision-making
- Support the navigation of treatment decisions, completion of treatment and follow-up care

The ACS plans a robust evaluation of the program and dissemination of its results to advance best practices in patient navigation.

CAMDEN COALITION OF HEALTHCARE PROVIDERS – ACO CAPACITY BUILDING

Through a two-year (2015–2016) grant, our Foundation is supporting the Camden Coalition of Healthcare Providers (CCHP) in its efforts to transform the delivery of primary care as a Medicaid Accountable Care Organization (ACO) in Camden, New Jersey. CCHP is working to bolster four key components of an effective, well-functioning ACO:

- **Data:** Expanding the scale and functionality of the citywide Health Information Exchange
- **Clinical Redesign:** Improving the quality and delivery of primary care through more efficient office work flow, performance score cards, and quality metrics
- **Care Coordination:** Implementing team-based care management and coordination for patients who are "high utilizers" of the health care system
- **Community Engagement:** Engaging community stakeholders through advocacy and outreach to build widespread support for the CCHP ACO

Preliminary results from these efforts are anticipated later in 2016.

MERCK CHILDHOOD ASTHMA NETWORK (MCAN)

With funding from our company's Foundation, the Merck Childhood Asthma Network (MCAN), a U.S.-based initiative, was established to support programs that would help increase access to and improve the quality of asthma health care for children. These programs also advocated for and recommended public policies with the goal of expediting the implementation, dissemination and sustainability of science-based asthma care. MCAN concluded operations in 2015, but leaves a legacy of experience that can be adapted and implemented by others providing services to at-risk populations.

Learn more.

CAPACITY BUILDING

We recognize that strengthening health systems and building health workforce capacity are important to improving access to quality health care and helping to address underlying barriers to health. Our investments in capacity-building are consistent with our corporate responsibility approach. Where feasible and appropriate, we seek to align our program investments with the health priorities of a country's ministry of health (MoH) to help ensure program sustainability.

AFRICAN PROGRAMME FOR ONCHOCERCIASIS CONTROL (APOC)

The African Programme for Onchocerciasis Control (APOC) was established in 1995 by the World Health Organization (WHO) to carry out a sustainable strategy to control onchocerciasis (river blindness) in Africa using MECTIZAN® (ivermectin), our company's broad-spectrum antiparasitic medication that treats river blindness. Starting in 2008, we committed $25 million over eight years to the World Bank in support of APOC's continued development of country-led river-blindness efforts. In 2014, the APOC partnership supported treatment for an estimated 100 million people. In the coming years this number is expected to increase as the WHO and other partners pursue a strategy to eliminate onchocerciasis transmission using MECTIZAN, signaling a shift from a control strategy to an elimination strategy that will require broader treatment coverage.

Starting in 2008, we committed $25 million to the World Bank in support of APOC's river-blindness efforts.

Recent years have seen wider efforts to integrate neglected tropical disease (NTD) programs, and resources such as the WHO NTD Roadmap and the London Declaration on NTDs—to which our company is a signatory—are helping to inform that process.

Learn more about the MECTIZAN Donation Program.

THE MANAGEMENT AND LEADERSHIP ACADEMY OF THE BROADREACH INSTITUTE FOR TRAINING AND EDUCATION (BRITE)

With a $4 million commitment from our company's Foundation, the BroadReach Institute for Training and Education (BRITE) implemented its Management and Leadership Academy (MLA) program in Zambia. The program teaches critical management and leadership skills to health care professionals in order to build and strengthen the capacity of their local health systems. This program helped equip health care workers with the knowledge and skills to lead, own and, ultimately, transform the delivery of health care in their own countries.

BRITE worked with Abt Associates in implementing this MLA program and received additional support under the USAID-funded Zambia Integrated Systems Strengthening Program (ZISSP). BRITE and ZISSP worked in close partnership with the ministry of health and the National Institute of Public Administration (NIPA)[1] in Zambia to support the ministry's ongoing efforts to develop management and leadership capacity at different levels of the health system. The MLA program has been

endorsed by the MoH as an important component of the government's capacity-building efforts and is accredited by NIPA.

Through the MLA program, BRITE and its partners conducted training for health care professionals in all 10 provinces across 27 target districts of Zambia. Between 2011-2014, BRITE trained 767 health care professionals in MLA.

During 2015, BRITE conducted a survey of 90 MLA alumni. Their responses confirmed that the MLA training was relevant, helped improve the workplace climate in health facilities, helped strengthen the delivery of health services, and provided opportunities for career advancement. BRITE also focused on helping ensure MLA program sustainability by training 91 MLA master trainers within Zambia's ministry of health in 2015. The master trainers enable the government to provide MLA training to more trainers, to increase the number of trainees, and to enhance its overall capacity to improve health services delivery. In 2016, BRITE will continue to advance long-term sustainability efforts by working to integrate MLA into the regular curriculum of the University of Zambia School of Medicine and NIPA's general course offerings. Foundation funding for MLA concluded in 2015.

ENGENDERHEALTH—MOBILE OUTREACH PROGRAM

With a three-year (2012–2014) grant from our company's Foundation, EngenderHealth worked to build the capacity of health workers and implement mobile outreach services to increase the availability and accessibility of effective family-planning and reproductive health services among underserved, rural populations in Ethiopia. The program spanned 19 remote districts in three regions of Ethiopia: Amhara; Oromia; and the Southern Nations, Nationalities and People's Region (SNNP).

In each region, EngenderHealth worked in close collaboration with ministry of health (MoH) partners to strengthen the capacity of health program managers and service providers. These capacity-building efforts facilitated the introduction and sustainability of high-quality family-planning services through regular outreach at decentralized health facilities that otherwise could not offer these services. EngenderHealth also worked with selected community-based organizations in each of the three regions to conduct training for community-level health providers and volunteer "health agents." The training equipped community health providers and volunteers to be able to provide information and counseling on effective family planning through peer-group discussions.

The project used a "public-to-public" mentorship model whereby trained family-planning providers from higher-level health facilities provided services at lower-level sites that lacked the staff, infrastructure and supplies needed to provide services on a routine basis. This approach helped strengthen the district health system by training and orienting service providers and community volunteers as well as supporting the gradual transfer of skills and capacity between public health facilities to ensure the sustainability of the interventions.

Overall, the project built up the capacity of 23 host sites (four hospitals and 19 health centers) and 72 peripheral health centers to initiate and sustain regular mobile outreach services across the three regions. To date, 78 qualified family-planning providers from the 23 host facilities have received training and regular on-the-job clinical coaching and supportive supervision. Additionally, 152 service providers from mobile outreach facilities have received training to strengthen their counseling skills as well as their provision of family-planning services. An additional 592 health extension workers (community-level providers) received training on effective family-planning methods, counseling skills, referrals and client follow-up. The Mobile Outreach Program provided family-planning services to more than 31,000 clients and disseminated information to more than 251,000 married women of reproductive age and married men residing in some of the most remote districts in Ethiopia.

EngenderHealth completed an end-of-project evaluation and disseminated the results and lessons learned during three in-country workshops (one per region), including 178 participants from the Regional Health Bureau and Zonal Health Departments, and District Health officials and mobile outreach facility managers and providers, among others.

From the outset, the project considered the sustainability of the intervention by design and progressively provided capacity-building and technical support tailored to promote a smooth transition of the program to the MoH. By the end of the project, all implementing districts had prepared final sustainability plans for implementation, which affirmed the full transition of the Mobile Outreach Program to the government and ensured sustainability of the training and medical supplies.

POSSIBLE-DIGITAL SUPPLY CHAIN MANAGEMENT PROGRAM

With a one-year grant from our company, Possible is implementing an integrated digital model for pharmaceutical and consumable supply chain management within Nepal's public health care infrastructure. The program plans to implement and refine an electronic stocking system that can be replicated throughout Nepal's public health care system. This model aims to integrate with Nepal's first electronic medical record (EMR) system and serve as a replicable model for Nepal's health care system in order to expand reliable and consistent access to high-quality pharmaceuticals and consumables.

The project was first launched in 2015 through key investments in physical storage capacity at Bayalpata Hospital in Achham District, along with the launch and refinement of a digital OpenERP supply chain management platform for pharmaceuticals and consumables. In the first quarter of 2016, the system expanded to Charikot Hospital in Dolakha District (the area severely impacted by the May 2015 earthquake in Nepal).

Possible launched OpenERP at Bayalpata Hospital in September 2015. Since the launch of OpenERP, Possible has been able to more effectively manage its inventory of pharmaceuticals and consumables, leading to improvements in the average stock-out rate for all medicines and reduced costs in the pharmaceutical supply chain. Possible is now better able to predict stock needs and procure pharmaceuticals weeks in advance to maintain the needed supply. It is also better able to track and predict usage to further refine the pharmaceutical supplies that it receives from the government of Nepal. Additionally, since OpenERP links directly to the EMR, it allows Possible to track and manage its full supply chain, providing essential data that can be used to inform quality of care.

SAVE THE CHILDREN FEDERATION, INC.—FRONTLINE HEALTH WORKERS PROGRAM

With a $5 million grant over six years (2011–2016) from our company's Foundation, Save the Children is implementing frontline health worker training programs in Pakistan and Nepal. When properly trained and supported, community health workers, midwives and health assistants can help reduce the rates of maternal and infant mortality caused by preventable and treatable diseases, such as pneumonia, malaria and diarrhea, and from complications of pregnancy and birth.

In Pakistan, the project reached seven remote and underserved districts (Shangla, Battagram, Haripur, Malakand, Swabi, Buner and Charsadda) of the Khyber Pakhtunkhwa (KPK) Province to increase access to high quality, lifesaving maternal, newborn and child health services. The program also supported the National Maternal, Newborn and Child Health program of Pakistan's ministry of health. To date, 3,796 frontline health workers have received training in Essential Newborn Care.

In addition, 2,911 Lady Health Workers (LHWs) and 40 Lady Health Trainers have completed their training on Community Case Management (CCM) of pneumonia, diarrhea and malaria. In the Battagram District, Save the Children, in collaboration with Pakistan's department of education, completed the planning and implementation of the Accelerated Education Program, which helps women reach an eighth-grade education level so that they can be eligible for training as Lady Health Workers. Sixteen Accelerated Education Program centers (covering grades 6 to 8) have been established. Sixty LHW candidates (who have already passed grade eight) began the 15-month training program in 2014. Among this first cohort of trainees, 16 trainee LHWs were selected to join the national LHW program in 2015. Additionally, another 35 female candidates were selected in 2015 to participate in the Community Midwives Training Program. Save the Children program operations in Pakistan concluded in August 2015.

In Pakistan, the frontline health worker programs reached seven remote and underserved districts to increase access to high quality, lifesaving maternal, newborn and child health services.

In Nepal, the program focused on increasing the quality and coverage of maternal, newborn and child health services by

training frontline health workers in two districts (Baitadi and Bajura) of the Far-Western Region. The project also focused on strengthening national-level activities to improve the quality of pre-service frontline health worker training in maternal, newborn and child health services at Nepal's health institutes. To date, 944 frontline health workers, traditional healers, Female Community Health Volunteers (FCHVs) and other stakeholders have been trained for the Community-Based Newborn Care (CBNC) Program in the Bajura District.

During 2015, Save the Children completed pre-service training of approximately 60 nursing focal teachers. Training focused on skills and knowledge regarding essential newborn care. Save the Children also has worked closely with Nepal's child health division of the department of health services to help ensure a smooth transition of the Community-Based Integrated Management of Newborn and Childhood Illness (BC-IMNCI) Program to the government of Nepal in Baitadi and Bajura Districts. Save the Children plans to expand the CB-IMNCI Program in two new regions (Dang and Kailali) of Nepal during 2016.

AMERICARES—HEALTH WORKFORCE SAFETY

In 2014, we donated $25,000 and 5,400 doses of RECOMBIVAX® HB to AmeriCares to help protect health workers and medical students in Tanzania's Lake Zone against hepatitis B infection. The goals of the program include increasing hepatitis B coverage to 90 percent among health workers and students; collaborating with the ministry of health and social welfare in its objective to increase hepatitis B vaccination coverage among high-risk health workers nationally; and documenting program outcomes including workplace satisfaction; effective infection prevention and control protocols; effective reporting of needle-stick injuries (and a decline in numbers); and best practices in waste segregation. As of December 2015, a total of 1,652 staff and medical students were vaccinated, along with a percentage of new hires throughout the program implementation, which ran from January through June 2015. Some of the lessons learned were that hepatitis B vaccination was more successful (better turnout and and a higher attendance at follow ups) where sensitization campaigns on the need for vaccination were held prior to actual vaccination, and screening prior to vaccination followed by individual counseling for those who were hepatitis B–positive was very helpful in avoiding false expectations and reducing wastage of vaccines. The program builds upon the successes of the Health Workforce Safety Program conducted from 2009 through 2012 by AmeriCares (also with support from our company) at the Bugando Medical Centre in Tanzania.

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[1]NIPA is the national academic institution whose mandate is to build capacity in the Zambian civil service.

MAIN

We aspire to have a positive impact on the communities in which we operate around the world.

Our community engagement programs reflect the priorities that our company shares with the local community. Our signature Neighbor of Choice program is designed to help build strong and vibrant communities by promoting a healthier society and preserving the environment in localities where we have a major site presence. The program provides financial support and enables our employees to contribute to the well-being of their communities.

Learn more about our economic impact on communities.

Our company's Foundation has pledged $2.4 million over four years (2014–2018) to the Red Cross' Annual Disaster Giving Program.

Learn more about our economic impact on communities.

GRI G4-EC1

GRI G4-EC7

GRI G4-EC8

Contributions to Community Programs

	2011	2012	2013	2014	2015
Art	$113,000	$612,000	$412,500	$729,325	$735,000
Civic	$103,000	$1,358,000	$924,448	$1,350,950	$135,375
Education	$614,000	$404,000	$630,644	$923,465	$586,277
Environment	$158,000	$125,000	$157,977	$148,665	$123,144
Human Health Services	$1,677,000	$867,000	$1,794,977	$1,941,185	$2,690,459

THE CHILDREN'S INN AT NIH

Our company's partnership with The Children's Inn at NIH spans more than 25 years. Our company provided $3.7 million through a public-private partnership for the initial construction of The Children's Inn at the National Institutes of Health (NIH), the world's premier biomedical research center, in Bethesda, Maryland. The Inn opened in 1990 and, since then, seriously ill children involved in treatment at the NIH have had a place to call home.

Most children who come to the NIH for treatment are facing life-threatening illnesses that resist conventional therapy. Since its opening, The Inn has hosted more than 12,000 children from all over the U.S. and from more than 85 other countries. Our foundation helps cover The Inn's operating costs, and also provided a grant of $3.7 million in 2001 to build a 22-room addition, completed in 2004, increasing The Inn's capacity to 59 rooms. Our employees also have generously supported The Inn through personal contributions as part of our company's Partnership for Giving (P4G) program.

Since 2009, our foundation has committed $10 million through 2018 to support the establishment and operations of a transitional home adjacent to the NIH campus, called The Woodmont House. This home can accommodate up to five families at a time whose children are no longer in the acute phases of illness yet still require treatment at the NIH Clinical Center. Families stay free of charge and may participate in all of The Inn's activities and programs. To date, The Woodmont House has served more than 260 children and their families from 29 U.S. states and Puerto Rico, and nine other countries.

In 2015, the The Inn's 2014 pilot "isolation" project–*Isolate Inn*–was implemented as an ongoing program at both The Inn and The Woodmont House. This program provides accommodations for families with children who must be isolated from the general pediatric population to avoid potential infections that would severely affect children with compromised immune systems. To date, the *Isolate Inn* program has served more than 40 patients, with 10 long-term isolation patients staying at The Woodmont House.

NEIGHBOR OF CHOICE

Our signature Neighbor of Choice (NOC) community program supports the work of local nonprofit organizations that strive to improve the quality of life of people and preserve the environment in communities where we have a presence.

GRI G4-SO1

Established in the 1990s, the NOC program fosters partnerships with local nonprofit organizations whose mission is to enhance the well-being of community residents. We provide financial resources, enhanced by employee volunteerism, to

support community programs that aim to improve health care quality and increase access to care for underserved populations in the areas of cancer, diabetes, heart disease, hepatitis C, HIV/AIDS and maternal health. We also strive to advance the quality of health services delivery, strengthen local health system capacity, and protect the environmental health of the local community.

Giving Totals

	2011	2012	2013	2014	2015
Amount contributed (in millions)[1]	$2.7	$2.8	$2.3	$2.2	$2.5
Number of grants	112	170	181	126	129

[1] For 2011 to 2015, data include funding provided through the Office of Corporate Responsibility and our company's Foundation. Additional funding is provided through local U.S. sites and our company sites outside the United States that we do not track centrally.

In 2015, our company invited nonprofit organizations located in 16 communities in which we have a major presence to apply for funding support. Factors that influence a site's participation in the NOC program include, whether the company has a manufacturing presence, the number of employees at the site, and community need.

In accordance with NOC program guidelines, a total of $2.5 million in grants was awarded to 129 nonprofits in support of a wide range of environmental and health services initiatives.

Below are examples of projects supported through the NOC grants program.

UNITED STATES

The United Way of Greater Union County
With the support from the NOC program, The United Way of Greater Union County provided services that supported families and communities through the Family Success Center in New Jersey. The grant helped the United Way serve more than 100 low-to-moderate-income families by providing increased access to social services programs; emergency rental, gas and electrical assistance; parenting skills training; life-skills training; after-school tutoring, and adult literacy programs.

The partnership between The United Way of Greater Union County and the company spans decades. Through the years, our employees have participated in "Days of Caring" and many other events. In 2015, more than 50 employees at the Rahway, New Jersey site collaborated with the United Way to donate holiday decorations to members of the community.

Susan G. Komen Breast Cancer Foundation
Employees at our site in Nebraska have partnered with the Susan G. Komen Breast Cancer Foundation many times in the past, particularly in recognition of the substantial number of employees and families affected by cancer. For example, in October 2015, more than 20 employees helped Komen Nebraska raise over $280,000 for breast cancer research through the "Race for the Cure®."

The Komen CEO, Dr. Judy Salerno wrote, "We are at an important crossroads in this mission against cancer. Finding the ways to put an end to cancer will come from people who care about science, who care about their societies, and who understand that the things worth doing won't come easily."

> “Thank you for your continuing support of the Komen Nebraska Race for the Cure. The attached Return on Investment highlights the impact on Nebraskans, where thousands of Omaha runners, walkers and volunteers joined together on October 4, 2015. In the bigger picture beyond the Race, your sponsorship makes a difference in the promise to save lives and end breast cancer. On behalf of Komen Nebraska and the thousands we serve, thank you for caring.”
>
> Karen Daneu
> Executive Director, Race for the Cure

Shenandoah National Park

With support from the site in Elkton, Virginia, the Shenandoah National Park adopted “Go Green” as among its highest priorities. “Go Green” is a commitment to sustainability. Shenandoah began converting to sustainable fuel sources, starting by replacing its vehicle fleet with hybrids and replacing outdoor lighting at Big Meadows Lodge with solar fixtures. By way of continuing “Go Green,” the NOC grant enabled the installation of solar energy systems to power two comfort stations in the Big Meadows Campground.

The installation of two grid-interactive, roof-mounted solar-energy systems started in November 2015. These solar energy systems will generate electricity to power the buildings’ lighting, ventilation, heat, and hot water. In addition, the system will reduce Shenandoah National Park’s carbon output by over 6,000 pounds per year. The photovoltaic panels will be clearly visible to 220,000 campground users every year and will demonstrate Shenandoah National Park’s commitment to alternative energy and conservation.

MEXICO

Casa de la Amistad para Niños con Cáncer
In 2015, MSD Mexico partnered with Casa de la Amistad para Niños con Cáncer, A.C., an organization dedicated to supporting children with cancer. This partnership supported the implementation of a nutritional program to strengthen the health of children receiving cancer treatment. The project, “Healthy Eating and Psychomotor Stimulation through Physical Education for Poor Children and Young People with Cancer” has been supported by our company for three years. Program results have demonstrated improvements in children’s health, with many maintaining their weight and reporting greater strength and energy.

In 2015, results included:

- Provided nourishing meals to children through cycle menus and other food packages
- Informed children and their parents about the importance of good nutrition during cancer treatment
- Strengthened the physical skills of children and their parents through psychomotor sessions
- Improved children’s motor skills such as, physical strength, endurance, space-time relationship, muscular tone, flexibility, coordination and movement

FRANCE

Association des Paralysés de France
MSD Mirabel partnered with the Association des Paralysés de France to improve the well-being and quality of life for the permanent residents of the Andalhone (APF) care-center for people with motor-neuron disabilities. The home, which houses 30 permanent residents, is located adjacent to our Mirabel site.

A ceremony was organized at the Mirabel site with local stakeholders from City Hall, Regional Council, Health Agency, the association and MSD employees.

DISASTER RELIEF

Our company provides disaster-relief assistance through cash and product donations during major disasters and supports efforts in disaster preparedness and recovery.

Through our disaster relief efforts, we aim to: respond in a timely, coordinated manner; meet the immediate needs of affected communities; provide ongoing assistance through recovery (as needed) and support preparedness efforts as appropriate.

It is our practice to base our response on the firsthand assessment of need by local authorities and/or humanitarian relief agencies.

Where appropriate, and in consultation with local management, our company may donate pharmaceuticals and vaccines through the disaster and emergency relief component of our company's Medical Outreach Program. In major disaster situations, donations of our medicines may be made directly by a local subsidiary or manufacturing facility.

Disaster & Emergency Relief Summary	2011	2012	2013	2014	2015
Disaster relief efforts assisted	13	6	10	10	12
Total giving value of disaster relief contributions (cash and products, US$M)	13.8	2.7	3.3	10.0	5.6

RESPONSE TO THE EARTHQUAKE IN NEPAL

Our company responded quickly to support relief efforts in response to the earthquakes that struck Nepal in April of 2015. We donated a total $190,000 to relief agencies including World Vision, International Medical Corps, Project HOPE, Direct Relief, AmeriCares and MAP International to support their response efforts. In addition, our Medical Outreach partners shipped our donated products (valued at more than $3 million) to support the relief and recovery efforts. We also matched donations made by our employees to humanitarian organizations involved in the response.

RESPONSE TO THE REFUGEE AND MIGRANT CRISIS

The refugee and migrant crisis in Africa, Europe and the Middle East affects not only those fleeing their home countries, but also the countries in which they seek asylum and through which they travel. In 2015 in response to this crisis, we donated $50,000 to Save the Children's Child Refugee Crisis appeal. Save the Children is working with children and families in several countries to provide ongoing support, including medical and psychological care, accommodations, legal assistance, food and water. We also matched employee donations to Save the Children and other organizations that responded to the crisis.

CONTINUED RESPONSE TO THE EBOLA VIRUS DISEASE OUTBREAK

As reported in 2014, our company partnered with the International Medical Corps to build, staff and provide training on effective Ebola isolation units and referral systems in Bong County's Phebe and C.B. Dunbar Hospitals in Liberia. As of April 2016, a total of 180,589 patients, staff, visitors and caretakers have been successfully screened at Phebe and CB Dunbar hospital Screening and Referral Units (SRUs). In total, 49 patients were identified as meeting Ebola-suspect definition and referred to the Bong Ebola Treatment Unit for Ebola testing.

Based on the success of the program, and with the support of and at the request of the Ministry of Health, and with co-funding support, International Medical Corps was able to expand its training and infrastructure efforts from the original two facilities to a total of 11 facilities across Bong, Margibi and Montserrado Counties in Liberia. International Medical Corps completed the transition of the temporary SRU structures to permanent structures at C.B. Dunbar and Phebe Hospital as of the end of April 2016.

In addition, our Medical Outreach partners continued to ship donated products, as needed, to support the recovering health systems in Liberia and Sierra Leone.

AMERICAN RED CROSS

Our company is a long-standing member of the American Red Cross Annual Disaster Giving Program (ADGP). Our company's Foundation has pledged $2.4 million over four years (2014–2018) to support the ADGP and to help ensure that the Red Cross can be on the scene of a disaster as soon as possible.

Our support helps the Red Cross deliver assistance immediately across affected areas in the U.S. and globally, working in partnership with local agencies. For example, the financial support our company provided through the ADGP was used to help the Red Cross coordinate with Nepal's Red Cross and its global network to quickly scale-up the response in that country following the earthquake. The support also enabled the Red Cross to track and map population movements into Europe activities during the height of the refugee and migrant crisis.

MAIN

As of 2016, we are phasing out support of STEM (science, technology, engineering, and mathematics) education as a giving priority to more closely align our charitable giving efforts with our corporate responsibility approach and our company's mission.

As a result, we are not making any new philanthropic investments in STEM education. This strategic alignment will enable us to focus our resources, including our philanthropic giving, on addressing the world's most pressing health care needs. There were two remaining graduate/post-graduate education initiatives for which funding concluded at the end of 2015: A partnership with the United Negro College Fund (UNCF), and another between the Kilimanjaro School of Pharmacy and Purdue University.

THE SCIENCE INITIATIVE WITH UNCF

African Americans currently hold fewer than 3.2 percent of all Ph.D.s in the United States in the biological sciences and chemistry.

To help address this disparity, we joined with UNCF in 1995 to establish a groundbreaking program to support the Science Initiative ("Initiative") with UNCF, a U.S.-based initiative. Between 1996 and 2015, the Initiative established a highly selective fellowship program that supported the training and development of African Americans pursuing research careers in the life sciences by providing scholarships, stipends and professional development activities. Each year up to 37 outstanding Fellows were selected from a national pool of African American students and postdoctoral scientists, which has resulted in over 700 awards. Scholarship recipients were also part of a larger network of alumni. They were mentored by senior scientists who shared their expertise and offered career advice to ensure that the Fellows moved seamlessly from one educational level to the next.

Since 1995, together with our company's Foundation, we have committed a total of $47 million to supporting the Initiative.

IMPACT

Over the 20 years that we have partnered with UNCF, the program has achieved important results. The fellowship program helped to support more than 700 African Americans in the life sciences pipeline—a majority of whom now hold advanced degrees, e.g., PhD, MD or MD, PhD. In addition to achieving tenure as academic researchers, several alumni of the program hold endowed chairs in their respective academic research departments while others have successfully reached the C-suite as executives in biotechnology firms. Over the years that this program has been operating, the science initiative has served as a model for other programs seeking to have similar impact on diversity and inclusion in the industry. The emergence of similarly focused life science initiatives and a vibrant alumni association are legacies of this effort.

KEY LEARNINGS

- Summer research experiences were important to prepare undergraduate fellows for graduate school
- Access to mentors was a key aspect of the program that helped fellows to navigate graduate school and career choices
- Established a vibrant alumni community of scientists and industry professionals and created long-lasting social bonds beyond the initial fellowship experience. The alumni association will continue to yield professional benefits.

UNCF Partnership (1996–2015)	
Company and Foundation investment in the Initiative[1]	$47M
Degree Completion Rates of Fellows	
Undergraduate (BA/BS)	100%
PhD	99%
Employment Outcomes of Graduate Fellows	
Academic	75%
Business/Industry	25%
Number of Fellows hired by our company (2002–2015)	19

[1] Represents total funding commitment (1996–2015).

GRADUATE PROGRAM IN BIOTECHNOLOGY INNOVATION

To help improve access to quality medicines in Africa, we partnered with the Kilimanjaro School of Pharmacy in Tanzania and Purdue University in Indiana to establish the first master's degree program in Africa focused on building the knowledge and skills needed to develop and manufacture high-quality medicines.

Our company's Foundation is supporting a partnership with Purdue University, the Kilimanjaro School of Pharmacy and the United Nations Industrial Development Organization (UNIDO) to fund a two-year pilot Master of Science degree program in biotechnology innovation and regulatory science. The program also includes our research scientists, who serve as faculty members to facilitate on-site instruction and virtual learning labs. The program has been identified by a number of regional African authorities as a key component of efforts to strengthen regional pharmaceutical manufacturing capabilities that are needed in the region.

In 2014, 41 graduate students, including 15 women, became the first two cohorts of master's degree students admitted to the Biotechnology Innovation and Regulatory Science program at the Kilimanjaro School of Pharmacy and the Purdue University Graduate School. All 41 students were awarded scholarships and have attended a two-week instructional session each semester since September 2014. The first cohort of 10 students is expected to graduate from Purdue University in May 2016. The remaining students are expected to graduate in the spring of 2017.

OUR GIVING

FOUNDATION

Our company's Foundation (the "Foundation")—established in 1957—is funded entirely by our company and is our chief source of funding support for qualified nonprofit charitable organizations.

The Foundation supports eligible nonprofit organizations and innovative programs that are aligned with our two focus areas: Health and Community.

Since its inception, the Foundation has contributed more than $844 million to support initiatives that address important societal needs in a manner consistent with our company's overall mission to help the world be well.

The following priorities guide the Foundation's strategic partnerships and program investments:

HEALTH

We strive to improve health care quality and capacity as well as increase access to care for underserved populations in selected disease areas of global need and relevance to our company. We focus on the following non-communicable or chronic conditions: cancer, diabetes, hepatitis C and HIV/AIDS.

Key initiatives include:

- African Comprehensive HIV/AIDS Partnerships (completed)
- Alliance to Advance Patient-Centered Cancer Care

- Alliance to Reduce Disparities in Diabetes (completed)
- American Cancer Society —Patient Navigation Program
- BroadReach Institute for Training and Education—Management and Leadership Academy
- Camden Coalition of Healthcare Providers – Building Capacity of Accountable Care Organization
- China/MSD HIV/AIDS Partnership (C-MAP)
- EngenderHealth—Mobile Outreach Program
- GARDASIL® Access Program (completed)
- HIV Care Collaborative
- Merck Childhood Asthma Network (MCAN)
- Save the Children—Frontline Health Workers initiative

EDUCATION

As of 2016, we have phased out support of STEM (science, technology, engineering and mathematics) education as a giving priority to more closely align our charitable giving efforts with our corporate responsibility approach and our company's mission. As a result, we are not making any new philanthropic investments in STEM education. There were two remaining graduate/post-graduate education initiatives for which funding concluded at the end of 2015: A partnership with UNCF, and another between the Kilimanjaro School of Pharmacy and Purdue University.

COMMUNITY

We provide financial support and share the expertise of our employees through grant and volunteer programs that address critical health and social issues in communities where we have a presence.

Key initiatives include:

- Neighbor of Choice Program
- Partnership for Giving
- The Children's Inn at NIH

It’s not enough to discover and develop new medicines and vaccines. We also need to help get them to the people who need them.

One important way to achieve that goal is through donations of medicines and vaccines that address specific health needs, whether in communities with a fundamental lack of access to health care and services or in acute or protracted humanitarian crises.

Our product donation programs and initiatives include:

- The MECTIZAN® Donation Program—one of the most significant initiatives undertaken by our company to help improve access to medicines in developing countries. Established more than 25 years ago, the MECTIZAN Donation Program is the longest-running disease-specific drug donation program and public-private partnership of its kind, and is widely regarded as one of the most successful public-private health collaborations in the world.
- Our Medical Outreach Program—the primary mechanism through which we donate our pharmaceuticals and vaccines for humanitarian assistance in the developing world and in support of disaster relief and emergency response worldwide
- U.S. Patient Assistance Programs—We provide our company’s medicines and adult vaccines free of charge to people who do not have prescription drug or health insurance coverage and who, without our assistance, could not otherwise afford them

Product Donations

MECTIZAN® (ivermectin)	2011	2012	2013	2014	2015
Direct investment in the MECTIZAN Donation Program (in millions)	$5.5	$5.5	$5.5	$5.5	$5.8
Total treatments approved (in millions)[1]	233.5	229.0	295.0	257.0	176.0
Treatments approved for river blindness	104	85	128	39	55
Treatments approved for lymphatic filariasis (LF)	93	109	127	147	94
Treatments approved for joint river blindness and LF programs	36.5	35	40	71	27
Market value of MECTIZAN donations (in millions)	$747	$906	$1,092	$861	$1,083
Medical Outreach Program (MMOP)					
Value of donations of medicines, vaccines and consumer care products (in millions)[2,3,4]	$89.8	$86.3	$69.4	$110.2	$31.1
Disaster relief contributions (product) (in millions)[2]	$10.40	$0.78	$2.40	$8.50	$4.7
U.S. Patient Assistance Programs					
30-day prescriptions filled (millions)	2.5	2.2	1.2	1.6	1.6
Total value of our company's medicines dispensed (in millions)[5]	$301.2	$559.0	$566.4	$432.9	$566.6

[1] Additional detail from previous reports to provide more detailed breakdown of donation by disease
[2] We set the value of our product donations based on the U.S. wholesale acquisition cost.
[3] Figure includes the value of product donations through the MMOP program only. Product donations to ACHAP are included in the ACHAP section.
[4] The 2014 figure does not include donations of our company's consumer care items. All our consumer care donations made in 2014 are captured in the subsidiary and divisional figure ($2.8M in 2014). Effective October 1, 2014, Bayer AG purchased our company's consumer Care business.
[5] Totals are based on the U.S. wholesale acquisition cost (WAC) and cover all programs.

We recognize that our external stakeholders, including customers, communities, neighbors and shareholders have an interest in how we conduct ourselves and how we support our commitment to society.

Our philanthropy must reflect efficient, responsible, and ethical judgment and behavior. This is why our charitable contributions are periodically audited to ensure consistency in our giving criteria and grant-making as well as adherence to compliance and transparency requirements. Additionally, our Foundation's Board of Trustees provides oversight and strategic direction for the Foundation's program investments.

Our Office of Corporate Responsibility provides cash and product donations, and coordinates employee volunteerism and disaster-relief assistance. The Foundation serves to fund qualified nonprofits and philanthropic organizations.

We use an online grants management system, which allows qualified, nonprofit organizations that are seeking cash contributions to electronically submit proposals and supporting documents. It also facilitates the submission of all required compliance documentation and helps ensure consistent review of grant requests.

We manage our philanthropic giving through two means:

- The Office of Corporate Responsibility supports charitable programs through cash and product donations and employee volunteerism. The Office of Corporate Responsibility also coordinates the company's disaster-relief assistance throughout the world.
- Our company's Foundation, funded entirely by Merck & Co., Inc., Kenilworth, N.J., USA, serves as the company's chief source of funding support to qualified nonprofit charitable and philanthropic organizations whose initiatives address important societal needs and whose goals are consistent with our giving priorities.

CHARITABLE GRANTS

We report the company's charitable contributions and the Foundation's grants on this website and update the information quarterly.

OUR GIVING

EMPLOYEE GIVING

MAIN

Around the world, our employees take an active role in giving back to their communities through a variety of programs.

We are proud of our employees' dedication to serving others. Our Global Volunteerism Policy provides employees with the opportunity to take up to 40 hours of paid time off annually to engage in volunteer activities that support eligible nonprofit organizations. Additionally, we offer a dollar-for-dollar matching gift program for active and retired employees in the U.S. and Puerto Rico, and a "Dollars for Doers" volunteer rewards program, which provides contributions to eligible organizations, based on employee volunteer hours performed by active U.S. and Puerto Rico employees.

VOLUNTEERING

Each year, thousands of our employees volunteer during work hours and on their personal time to give back to their communities.

In celebration of our company's 125th anniversary, employees have been challenged to reach a companywide goal of 125,000 recorded volunteer hours in 2016. Employees are being encouraged to seek volunteer opportunities with nonprofit organizations dedicated to the causes that mean the most to them.

“MSD Gives Back” is our internal, global employee engagement website offering information and access about our giving and volunteering programs. The website serves as a central location where employees can record volunteer hours and share volunteer experiences through photos and stories. The site continues to draw new and returning visitors at a siginifcant rate, with 60 percent of over 26,000 visits in 2015 attributed to first-time access.

SKILLS-BASED VOLUNTEER PROGRAM

In 2015 we launched an innovative skills-based volunteer program in the U.S. The program offers employees in the U.S. and Puerto Rico access to high-impact volunteer opportunities while providing nonprofit partners with much-needed skilled assistance to help build capacity for their organization. This skills-based volunteer program offers employees the opportunity to donate their professional skills through virtual, short-term projects that provide important, capacity-building support for nonprofit organizations. Whether volunteering for a one-hour phone consultation or a 30-hour project, employees are given the opportunity to provide meaningful volunteer support for nonprofits in need, while using their professional skills in different and challenging environments.

Our employees find these projects to be enjoyable and gratifying experiences that provide opportunities to enhance their individual skill sets. Since its launch in 2015, almost 600 employees have registered on the site and over 55 projects have been completed or are underway, representing over 1,500 volunteer hours donated. Positive feedback received through completed project testimonials reflects nonprofits’ satisfaction with program results and an appreciation for the support provided.

MSD FELLOWSHIP FOR GLOBAL HEALTH

The MSD Fellowship for Global Health is a three-month, field-based corporate pro bono program designed to leverage the skills and talents of our employees. It pairs employee skills with the needs of nonprofit partner organizations around the world to provide meaningful and systematic improvements in health service delivery for people in the greatest need. Learn more.

MAKING POSITIVE CHOICES

Through the Making Positive Choices program, employees from New Jersey and Pennsylvania volunteer to have a positive influence on the lives of underserved and at-risk children and young adults through three programs offered and administered by Street Law, Inc. During 2015, more than 150 employees contributed 898 volunteer hours, reaching more than 500 students in school and community settings.

Volunteers were provided with training and support to enable their facilitation of three programs:

- **Community Works:** helping teens to prepare youth for participation in their communities in a positive way
- **Career Exploration:** preparing high school students to achieve academic and career goals
- **Youth in Transition:** providing youth in the foster care system with instruction in basic life skills and guidance to navigate community resources to help them live independently

PRO BONO LEGAL PROGRAM

Our company's Pro Bono Legal Program has been serving the poor and disadvantaged for over 21 years. Our legal professionals have been nationally recognized[1] for their commitment to providing pro bono assistance in areas such as guardianship, domestic violence, family law, child advocacy, Social Security disability benefits, veterans' affairs, and bankruptcy, as well as legal support for nonprofit organizations.

During 2015, more than 140 attorneys, paralegals and administrative associates, representing over 50 percent of the company's legal professionals, provided approximately 2,400 hours of pro bono legal services.

Our international attorneys, through a collaboration among external partners, attorneys from other multinational pro bono programs and local law firms, provided pro bono assistance in Bangladesh, Chile, India, Nigeria, Peru, Tanzania and Uganda, and Nepal. Our 2015 Pro Bono Legal Program included participation by 23 attorneys in 12 countries outside the U.S.

The Veterans Justice Initiative and the Landlord-Tenant Program of the Legal Services of Northwest Jersey, Inc. (LSNWJ), provides legal assistance to low-income and vulnerable residents in meeting the basic needs essential to self-sufficiency. Our legal professionals, in collaboration with LSNWJ, outside counsel and other corporations, completed 271 cases, providing pro bono legal assistance to displaced or transitioning veterans and to low-income residents at risk of losing their housing.

More than 50 percent of our attorneys, paralegals and administrative associates have provided pro bono legal services.

The The Pro Bono Partnership, a nationally-recognized organization, provides free business and transactional legal services to help nonprofits in New York, New Jersey, and Connecticut achieve their goals, avoid risk, and better serve their constituencies. In 2015, fifteen attorneys from our company's Pro Bono Legal Program contributed to this organization's ability to provide business legal services for 693 nonprofit organizations.

Volunteer Lawyers for Justice (VLJ) relies on the talents and resources of volunteers to provide free legal services to low income individuals and families. Since 2009, our company has partnered with VLJ to provide pro bono legal services to low-income individuals and families seeking debt relief, and throughout 2015, our attorney's and paralegals assisted VLJ in providing consumer-law counseling to 39 bankruptcy clients.

[1] In 2013, the company's executive vice president & general counsel and the Pro Bono volunteers received the Pro Bono Institute's Laurie D. Zelon Award for their outstanding commitment to pro bono service.

PARTNERSHIP FOR GIVING

Partnership for Giving

The Partnership for Giving (P4G) is our company's year-round matching gift program. P4G supports active and retired employees in the U.S. and Puerto Rico who donate to causes that are important to them. Contributions to eligible organizations are matched dollar-for-dollar by our company's Foundation in support of nonprofits that help to promote a healthier society, advance education, foster the arts, address the welfare of animals and preserve the environment.

As volunteers for nonprofit organizations, active employees in the U.S. and Puerto Rico can have their volunteer hours matched by a cash contribution. Through the Dollars for Doers program, funded by our company's Foundation, employees investing 40 hours or more of service with an eligible organization can apply for a $500 contribution for that nonprofit, with an annual limit of two donations per eligible employee or volunteer team.

Touched by an Agency

Throughout 2015, employees shared their personal stories in recognition of and gratitude for nonprofit organizations that have made a difference in their lives or the lives of a family member. Through the Touched by an Agency program, employees were invited to nominate nonprofit agencies to receive a $1,000 donation as a "thank you" for their valued service. The 2015 Touched by an Agency program provided donations totaling $17,000.

PERFORMANCE

GRI G4-EC7

Employee Giving Summary

Volunteer Hours	2011	2012	2013	2014	2015
Employees who volunteered[1]	9,605	12,333	NA	8,667	9,381
Percent of total company population[2]	11.0%	15.0%	NA	12.5%	13.8%
Employees who used paid time off	8,058	9,732	NA	6,240	NA
Percent of total company population	9.5%	12.0%	NA	9.0%	NA
PTO hours[1]	130,900	142,082	NA	111,800	52,372
Total recorded volunteer hours (TRVH)[1]	213,000	221,050	NA	186,400	80,585
Ratio of PTO/TRVH	61%	64%	NA	60%	65%
Merck SkillShare[3]	NA	NA	NA	NA	1,500
MSD Fellowship for Global Health	NA	NA	NA	12,144	16,120
Pro Bono Legal	NA	NA	NA	3,200	2,400
Skilled volunteer hour as percentage of TRVH	NA	NA	NA	8.2%	25.3%

[1] 2015 figures are based on employee self-recorded volunteer hours through MSD Gives Back in the U.S. and Puerto Rico, and volunteer hours communicated directly to the Office of Corporate Responsibility for other countries. 2015 marks the first year in which volunteer-hour reporting is based solely on employee self-reporting. Prior years included estimates for unrecorded volunteer hours. [2] Company population figures are based on an estimated workforce of approximately 68,000 in 2015. [3]Our skill-based volunteer program launched in 2015.

In prior years, employee volunteer hours were reported using estimated hours. Beginning in 2015, we will no longer report estimated hours due to the planned implementation of an enhanced online system providing global access to our employees for reporting purposes.

Partnership for Giving (P4G)	2011	2012	2013	2014	2015
Total contribution (US$M)[1]	$27	$27	$28	$26	$21
Number of organizations that benefited	10,037	10,172	7,649	9,038	7,145
Number of employee/retiree participants	16,208	14,572	11,544	10,365	9,400
Touched by an Agency grants[2]	18	20	12	11	17

[1]Contributions through P4G include Foundation funds for direct giving and payroll deduction matching gifts, employee direct donations and payroll deduction funds, and Dollars for Doers matching funds. [2]Total for 2015 reflects those organizations that provided completed documentation required to received a Touched by an Agency contribution.

OUR GIVING

MSD FELLOWSHIP FOR GLOBAL HEALTH

MAIN

Our mission to improve and save lives underpins the idea behind the MSD Fellowship for Global Health.

GRI G4-EC7

The MSD Fellowship for Global Health is a three-month, field-based corporate pro bono program designed to leverage the skills and talents of our employees worldwide. Selected employees are referred to as Richard T. Clark (RTC) Fellows, in recognition of retired Chairman and CEO Dick Clark. The program pairs the best minds from our company with nonprofit partner organizations around the world to provide meaningful and systematic improvements in health service delivery for people in the greatest need.

Between 2012 and 2016, 130 RTC Fellows from 22 countries worked for 33 nonprofit organizations.

The 2015 RTC Fellows gathered for a reintegration workshop and award ceremony after completing their three-month assignments working with global nonprofit organizations.

The program aims to:

- Strengthen the capacity and reach of nonprofit organizations with technical and human capital support
- Provide rich professional development experiences for our employees
- Apply key learning across our broader organization

The Fellowship program connects employees with nonprofit organizations to utilize their business acumen in building organizational capacity, helping the institutions to provide increased access to health services, products and education in the communities they serve. The Fellows bring back experiences integral to our company's ability to deliver innovative health solutions to patients and customers around the world.

Between 2012 and 2016, 130 RTC Fellows from 22 countries worked for 33 nonprofit organizations.

MSD

FELLOWSHIP FOR GLOBAL HEALTH

PROGRAM IMPACT

A survey of 2015 Fellows and nonprofit hosts demonstrates the program's excellence in operational performance, as it generated significant gains in each of our targeted impact areas: processes, social impact, employee development and business benefit. Download the 2015 Impact Report for additional information.

- 100 percent of Fellows documented extraordinary or substantial skill gains in both leadership and job-related skill categories
- 96 percent of Fellows reported better connection to the company mission
- 100 percent of nonprofit hosts reported extraordinary or substantial capacity gains

> “It was amazing to have been part of something that impacts directly on improving lives and made me proud to be part of a company that supports such an important initiative.”
>
> James Stackhouse, MSD in Australia
>
> 2015 RTC Fellow

BECOME A FELLOWSHIP PARTNER

Partner organizations are chosen based on opportunities for capacity-building and shared learning. If you are interested in applying, please submit a project proposal. For more information about becoming a Fellowship partner, download the NGO overview deck, the Fellowship Guidelines for NGO Partners, and the Project Proposal Template.

CURRENT PARTNERS

Africare works to improve the quality of life of people in Africa. Africare is a leading nongovernmental organization (NGO) committed to addressing African development and policy issues by working in partnership with African people to build sustainable, healthy and productive communities. Learn more.

Peruvian women have one of the highest rates of cervical cancer in the world. This is disproportionately true for impoverished, indigenous women who live in the isolated mountainous regions of the country. **CerviCusco**’s mission is to reduce morbidity and mortality among all women in the region of Cusco through medical treatment and outreach with a culturally sensitive high quality of care. Learn more.

The International AIDS Vaccine Initiative (IAVI) is a global not-for-profit organization whose mission is to ensure the development of safe, effective, accessible, and preventive HIV vaccines for use throughout the world. Learn more.

As a nonprofit global health organization, **IDRI** (Infectious Disease Research Institute) takes a comprehensive approach to combating infectious diseases, combining the high-quality science of a research organization with the product development capabilities of a biotech company to create new diagnostics, drugs and vaccines. Founded in 1993, IDRI has 125 employees headquartered in Seattle and nearly 100 partners/collaborators around the world. For more information, visit www.idri.org.

Jhpiego is an international nonprofit health organization affiliated with The Johns Hopkins University. Jhpiego works with health experts, governments and community leaders to provide high-quality health care for their people. Jhpiego develops strategies to help countries care for themselves by training competent health care workers, strengthening health systems and improving delivery of care. Jhpiego designs innovative, effective and low-cost health care solutions to ensure a level of care for women and their families. These practical, evidence-based interventions are breaking down barriers to high-quality health care for the world's most vulnerable populations. Learn more.

Project HOPE delivers essential medicines and supplies, health expertise, and medical training to respond to disaster, prevent disease, promote wellness and save lives around the globe. Learn more.

RTC Fellows will be working on a project that is a joint effort between **Purdue University** and the **Kilimanjaro School of Pharmacy** (KSP). Purdue University, the U.S. partner in this program, is a top 70 international university located in West Lafayette, Indiana. KSP is a part of the Good Samaritan Foundation, a large nonprofit organization in Northern Tanzania. Learn More.

Sightsavers is an international organization that aims to eliminate avoidable blindness and to support and empower people with visual impairments and other disabilities. It works in more than 30 countries to prevent blindness and restore sight, and campaigns for disability-inclusive global development. Learn more.

OVERVIEW

KEY PERFORMANCE INDICATORS

Below are our key performance indicators (KPIs) for each of our four focus areas (Access to Health, Environmental Sustainability, Employees, Ethics & Transparency).

The following list of KPIs serves as baseline measurement for our corporate responsibility activities.

These indicators are measured globally unless otherwise noted and cover all of our business units with the exception of joint ventures.

Please click here to download a spreadsheet of all of our performance data, including KPIs.

Access to Health[1]

Research & Development	2011	2012	2013	2014	2015
Top 20 global burdens of illness addressed by our products and pipeline[2]	53%	55%	88%	88%	88%
GCP/PV audits by regulatory agencies or clinical trial investigators that led to significant fines, penalties, warning letters or product seizures	0	0	0	0	0
Established significant external licenses and collaborations[3]	52	61	40	35	64
Narrative of compounds provided to product development partnerships[4]	Online	Online	Online	Online	Online
Manufacturing & Supply					
Annual percentage of units manufactured/sold and recalled during a given year (recall rate globally)[5]	NR	0.19%	0.11%	0.22%	0.07%
Number of local and regional manufacturing partnerships to enable access[6]	130	84	68	104	179
Number of products available by local and regional partnerships[6]	NA	34	354	499	1,157
Registration					
New product and device registrations[7,8,9]	179	204	179	176	156
Local regulatory agency GCP/PV training requests fulfilled that will help strengthen agency capabilities in agencies' GCP/PV-compliance-oversight role[10]	Online	Online	Online	Online	Online
Products submitted that have achieved WHO pre-qualification	10	10	11	11	11
Commercialization					
Number of our products that are supported with differential pricing[11,12,13]	NA	NA	24	35	35
Number of low- and lower-middle-income countries where inter- and/or intra-country pricing has been implemented[11,14]	NA	NA	70	114	121
Investment in patient- and provider-education programs[15] (in millions)	$97.8	$71.4	$61.3	$52.3	$80.0
Community Investment					
Health care workers trained through major programs and partnerships	52,000	38,000	22,000	137,000	18,669
Investment in partnerships for activities to address underlying barriers to health, such as health-system strengthening and capacity-building (in millions)	$35	$24	$24	$32	$31
People reached through our major programs and partnerships (in millions)	273	269	302	267	188

NA: Not available. NR: Not reported.
[1] Unless otherwise noted, data for the Access to Health section are reflective of our Human Health business only; information on our Animal Health business is reported separately.
[2] As defined by the Institute for Health Metrics and Evaluation (IHME).
[3] Candidates in our company's research pipeline or under regulatory review are as of February 19, 2016, as reported in the U.S. Securities and Exchange Commission for 10-K., page 16, filed on February 26, 2016. This includes candidates in Phase II or Phase III trials, or under regulatory review as of February 26, 2016. As candidates attain regulatory approval, they are removed from this pipeline view.
[4] For information on product-development partnerships, visit the "Partnerships" tab at http://www.msdresponsibility.com/access-to-health/research-development/#tab-5591a965c9e82.
[5] Beginning in 2014, this figure includes recalls within our Animal Health business.
[6] In 2014, we expanded our reporting to all of our products, including the various strengths and presentations that are sold or distributed through a partnership in local markets, to more accurately reflect our efforts to address local needs.
[7] Data include new products and new indications.
[8] Data for all years have been updated based on a tracking-system upgrade that corrected miscounts in prior years.
[9] For information on new registrations by region, visit http://www.msdresponsibility.com/access-to-health/research-development/clinical-research/#tab-5591b7745c6c4.
[10] For information on local regulatory agency GCP/PV training requests, visit http://www.msdresponsibility.com/access-to-health/research-development/clinical-research/.
[11] In 2013, we modified our key performance indicators for differential pricing so that we can more broadly capture and accurately reflect our support.
[12] Differential pricing intended to facilitate access for the at-need population.
[13] Our products include HIV treatments, vaccines and other patented products.
[14] Countries as defined by the World Bank 2013 GNI Classification, including UN-defined "least developed countries."
[15] In 2013, we refined our support to prioritize and align resources to complement our core business strategy, which resulted in an overall decrease in funding.

Environmental Sustainability[1,2]

	2011	2012	2013	2014	2015
Greenhouse gas emissions (metric tons of CO_2e – Scope 1 & 2)	1,951,000	1,872,000	1,772,000	1,643,000	1,453,000
Water usage (billion gallons)	8.6	8.6	7.5	7.1	6.3
Operational waste generated (metric tons)	108,500	109,500	96,300	83,700	70,200

[1] Includes facilities worldwide.
[2] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired and sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.

Employees

Diversity & Inclusion	2011	2012	2013	2014	2015
Executive roles held by women[1,2]	35%	31%	31%	31%	34%
Women on the Board	17%	17%	17%	17%	21%
Underrepresented ethnic groups on the Board	11%	25%	25%	25%	21%
Underrepresented ethnic groups of executives (U.S.)[2]	17%	17%	20%	20%	20%
Underrepresented ethnic groups in the workforce (U.S.)	29%	24%	24%	24%	26%

Well-Being	2011	2012	2013	2014	2015
Response rate to the Voice Survey[3]	63%	77%	77%	78%	NA
Employees who completed a health assessment (U.S.)	58%	58%	62%	57%	58%
Lost-time incident rate (LTIR)	0.30	0.27	0.28	0.20	0.21
Recordable injury rate (RIR)	0.74	0.62	0.61	0.57	0.47

Volunteerism	2011	2012	2013	2014	2015
Employees who took release time according to the global policy on employee volunteerism[4]	11.0%	15.0%	NA	12.5%	13.8%
Volunteer hours[4]	213,000	221,000	NA	186,400	80,585

NA: Not available.
[1] Beginning with 2012, data reported for women are global; previously, these data were limited to the U.S.
[2] "Executive" is defined as the chief executive officer and two structural levels below.
[3] In 2014, we moved to a biannual administration of our global employee engagement survey.
[4] 2015 figures are based on employee self-recorded volunteer hours through MSD Gives Back in the U.S. and Puerto Rico, and volunteer hours communicated directly to the Office of Corporate Responsibility for all other countries. 2015 marks the first year in which volunteer-hour reporting is based solely on employee self-report. Prior years included estimates for unrecorded volunteer hours.

Ethics & Transparency

	2011	2012	2013	2014	2015
Employees trained on our Code of Conduct	90%	92%	99%	99%	99%
Ratio of substantiated allegations to concerns/issues raised	65%	60%	58%	60%	58%
Reported concerns regarding privacy practices, breaches of privacy, and losses of personal data and devices that were substantiated[1]	68%	23%	26%	18%	96%

[1] Privacy concerns include all concerns escalated to our Privacy Office about the company's privacy practices. Substantiated concerns are those that are determined to be inconsistent with our privacy standards or that involve the loss of, theft of or unauthorized access to personal data.

FORWARD-LOOKING STATEMENT

This communication of Merck & Co., Inc., Kenilworth, NJ, USA (the "company") includes "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of the company's management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline products that the products will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include, but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of pharmaceutical industry regulation and healthcare legislation in the United States and internationally; global trends toward healthcare cost containment; technological advances, new products and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approval; the company's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of the company's patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

The company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the company's 2015 Annual Report on Form 10-K and the company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site (www.sec.gov).

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