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QUININE FOR COVID-19 for now and in the future



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WHO WE ARE

Over-view

- LiveWell Initiative, LWI, is a responsible and goal-focused, self-funded nonprofit organization.

Our Mission

- To improve the health status of the people of Africa through wellness promotion and health empowerment and thereby positively influencing their health-seeking behaviour

Our Vision

- To halve health illiteracy in Africa by the year 2030; and to increase the life expectancy of the people to 70 by the year 2030.



EXECUTIVE SUMMARY

Facts on COVID-19

- The world is currently experiencing a pandemic of an infectious disease called coronavirus, or COVID-19.
- Africa, as of date has been experiencing increase in COVID-19 cases.
- However, the major challenge facing the continent's COVID-19 response is inadequate test kits.
- This is a major challenge in Nigeria
- Hence, there are a lot of asymptomatic cases out there.

Our COVID-19 RESPONSE

LWI has so far responded to the COVID-19 scourge with the following actions:

- Deployment of a Team tagged **#LWICOID19TEAM**
- Innovation of a Study Protocol 1, 2, 3
- Co-hosting a webinar with FIP and WHO EMRO to further discuss on our innovation.
- Preliminary Trials of the Study Protocols in collaboration with HCWs



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LWI STUDY PROTOCOLS

- The LWI Study Protocols have undergone Hypothesis Testing among Physicians, Researchers, Pharmacists and Clinicians, with online debates on several professional health platforms.
- The results in this preliminary study are based on preliminary data gathered from Physician-Patient recommendations of Prophylaxis. It also recognises some self medicating individuals who took advantage of the non-prescription remedy.
- The LWI Study Protocols are currently being used in Kaduna State, Bauchi State, and some other States in Nigeria.
- Recently it was discovered that some tertiary health institutions are using the LWI Study Protocols for COVID-19 Prophylaxis and Outpatient Care.
- The Study Protocols, composed of 6 segments namely;



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Component Parts of LWI

Protocols for COVID-19

- 1) PreExposure Prophylaxis
- 2) Post Exposure Prophylaxis
- 3) Ambulatory Care
- 4) Inpatients Care
- 5) Critical Care / ICU
- 6) Post-Discharge Intermittent Prophylactic Therapy IPT



4 AMINOQUINOLINES

- CHLOROQUINE / HYDROXYCHLOROQUINE (CQ/HCQ) for PrEP , Pre-Emptive Therapy and PEP
- CHLOROQUINE / HYDROXYCHLOROQUINE (CQ/HCQ) for Ambulatory Care
- **QUININE ORAL FOR Inpatient Care**
- **QUININE I.V. For Critical Care / ICU Patient**
- CQ/HCQ for IPT (*post-discharge Intermittent Prophylactic Therapy*)



4-AMINOQUINOLINES :

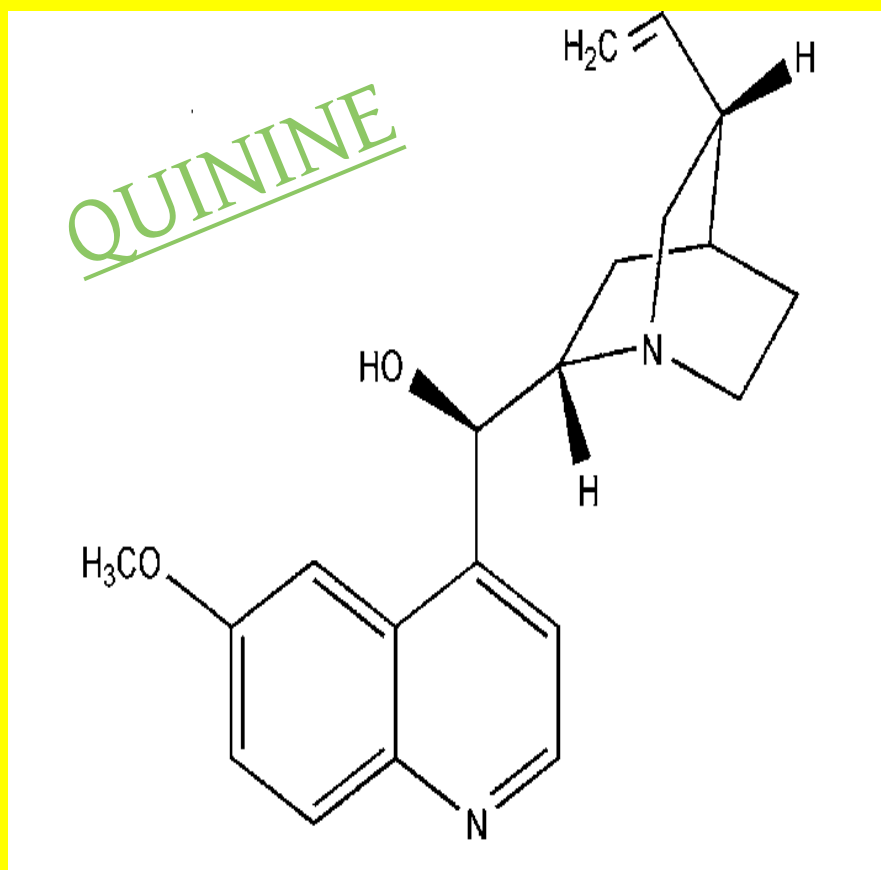
- Suppress exaggerated Immunoglobulin response IgG and IgM through Immunomodulation and therefore also exerts
- Antiinflammatory action
- A highly soluble and more potent 8-Aminoquinoline, **Quinine**, will cross the BBB
- Will therefore penetrate the Alveoli and displace the viruses, disseminate the glass ground opacity, restore heme iron and noormalcy
- Haemozoin Inhibitor – starves the virus of its food vacoules

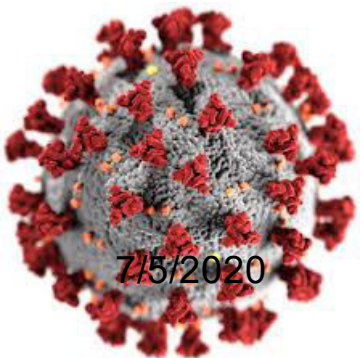
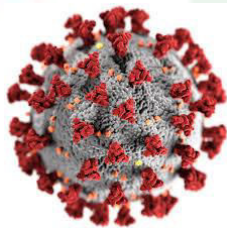
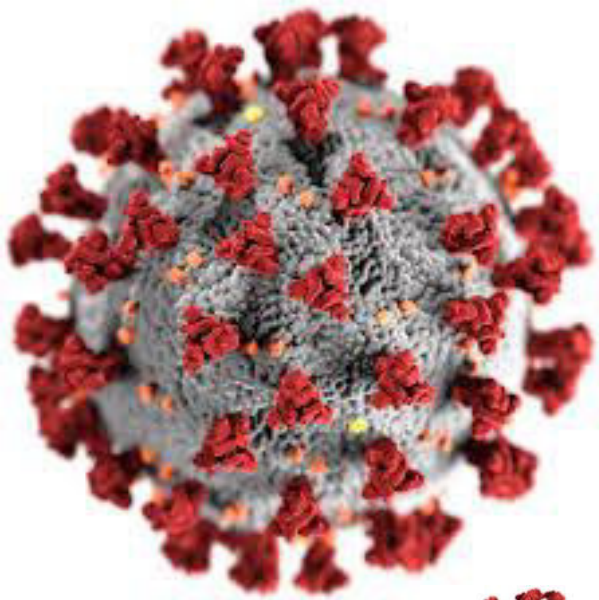


QUININE-IN-COVID-19!

▪ PROPERTIES

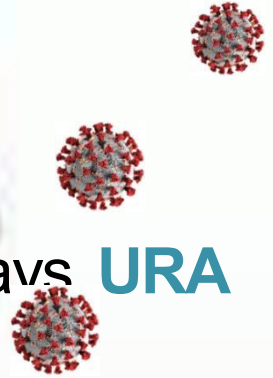
- Antiinflammatory
- Antiviral
- Crosses the BBB
- Breaks the Polymerase Chain
- Haemozoin Inhibitors
- Zinc Ionophore
- PCR Inhibitor





7/5/2020

Upper Respiratory Airways **URA**



Middle Respiratory Airways **MRA**



Lower Respiratory Airways **LRA** (Bronchi)



Lower Respiratory Airways **LRA** (Alveoli)





QUININE – MODES OF ACTION

- **Quinine** has a multiple modes of action on the virus
- It prevents the virus from penetrating the host cell using its S protein and Protease
- It breaks the polymerase chain and prevents viral replication
- It is a zinc ionophore and ensures penetration of zinc into the viral cell, altering the pH
- Zinc also potentiates **Quinine** action, and it has a good safety profile in therapeutic doses



Incidence of Risk Factors – QUININE

- Ototoxicity is reversible
- Those who were **elderly** or had **concurrent liver or renal dysfunction**
- **QT wave prolongation in patients after 4-5 years of abuse**

Nuanpan Tangtavorn, Yosanan Yospaiboon et al . [Incidence of and risk factors for chloroquine and hydroxychloroquine retinopathy in Thai rheumatologic patients](#) Clin Ophthalmol. 2016; 10: 2179–2185. Published online 2016 Nov 2. doi: 10.2147/OPHTH.S119872



EXCLUSION CRITERIA

MODERATE TO HIGH RISK:

- Cardiovascular Disease with recent travel abroad and without post-travel self isolation
- Acute Respiratory Airway Disease with or without recent travel
- Ageing Patients >65 years
- Hepatitis B or C patient in remission

HIGH RISK:

- History of Diabetes with recent travel
- Renal Disease
- Chronic Airways Disease – COPD, Emphysema
- Ageing Patients >75 years
- Hepatitis B or C patient not in remission
- Elevated Liver Enzymes



RISK MODIFICATION

– Pre-Testing

- LFT for Hepatitis with or without remission
- BUN, Urea and Creatinine for Renal History
- Electrolytes and ECG for severely Hypertensive patients and above 75 years
- Visual acuity before and after intervention for patients with Chronic Eye Disease
- Baseline BP, for continuous monitoring
- Dosage Calibration below 4G for all patients as much as is possible



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CQ / HCQ TOXICITY???

WRONG - OVERDOSE

- 450mg bd x 5
- 600mg bid x 10
- 600mg tid x 10
- 450mg tds x 5



RIGHT – LWI PROTOCOLS

- Within Therapeutic Margins
- Total loading dose less than 3.5g
- Safety Profile and Risk Profiling assured



**STUDY PROTOCOL****SUGGESTED TREATMENT PROTOCOLS FOR DEBATE - CORONAVIRUS COVID-19 – *Emergency Preparedness*****1. PrEP - Pre Exposure Prophylaxis****i) HealthCare Workers /Healthcare Professionals**

- Chloroquine 500mg stat daily x 3 days **or** Hydroxychloroquine 400mg stat daily x 3 days
- Azithromycin 250mg dly x 3 days

ii) Self- Isolated Persons

- Chloroquine 250mg stat then 250mg weekly x 3weeks **or** Hydroxychloroquine 200mg stat then 200mg weekly x 3weeks

iii) Self Quarantined Persons Post-Travel or Persons in an Epicenter

- Chloroquine 500mg stat then 250mg daily x 7 days **or** Hydroxychloroquine 400mg bd then 400mg daily x 7 days
- Azithromycin 250mg dly x 5-7days

2. PEP - Post Exposure Prophylaxis**i) Contact with a person who has tested Positive (without symptoms)**

- Chloroquine 500mg bd stat then 500mg daily x 3 days **or** Hydroxychloroquine 400mg bd stat then 400mg daily x 3 days
- Azithromycin 250mg dly x 3days

ii) Person with Dry Cough or Any throat Symptoms

- Chloroquine 500mg bd stat then 500mg daily x 3 days **or** Hydroxychloroquine 400mg bd stat then 400mg daily x 3 days
- Azithromycin 500mg dly x 3days

iii) Family members in a home with a self isolated member

- Chloroquine 500mg bd stat then 500mg daily x 3 days **or** Hydroxychloroquine 400mg bd stat then 400mg daily x 3 days

**3. INPATIENT – Admitted in Hospital or Isolation Centre**

Quinine p.o. 600mg tds x 5 days	Generous Fluids
Azithromycin 500mg dly x 7 days	Vitamin C 1000mg daily x 10 days
Zinc Sulphate 220mg daily x 7 days	Respirator

4. ICU PATIENT – INTENSIVE CARE UNIT**i) Patient with Severe Symptoms**

Quinine I.V. with dextrose tds	Vitamin C 1000mg daily x 10 days
Azithromycin 500mg i.v.	BLS
Zinc Sulphate 220mg daily x 7 days	Respirator / Ventilator
Generous Fluids	

ii) Patient in Critical State

Intensive Care in isolated IUC Bunker	Generous Fluids
Quinine I.V. with dextrose tds	Vitamin C 1000mg daily x 10 days
Azithromycin 500mg i.v.	ALS / Critical Pulmonary Care
Zinc Sulphate 220mg daily x 7 days	
Respirator / Ventilator	

The information in this STUDY PROTOCOL is shared for the purpose of professional debates among physicians and pharmacists and not for treatment. The above listed Protocols are subject to the discretion of Prescribing Clinicians and they are as recommended in a compilation of recent findings on COVID-19. LiveWell Initiative LWI, a nonprofit organisation, takes no liability for damage from the use of the above suggested STUDY PROTOCOL FOR DEBATE. This document is not intended for non-physicians and non-pharmacists. It is strictly meant for research, as we look towards a cure for the Pandemic.

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TABLE 1: LWI STUDY PROTOCOLS

FREQUENCY TABLE

Study Protocol	Frequency
Inpatient	11
Outpatient	1
PEP	34
PrEP	76
ICU_Patient	1
Grand Total	123

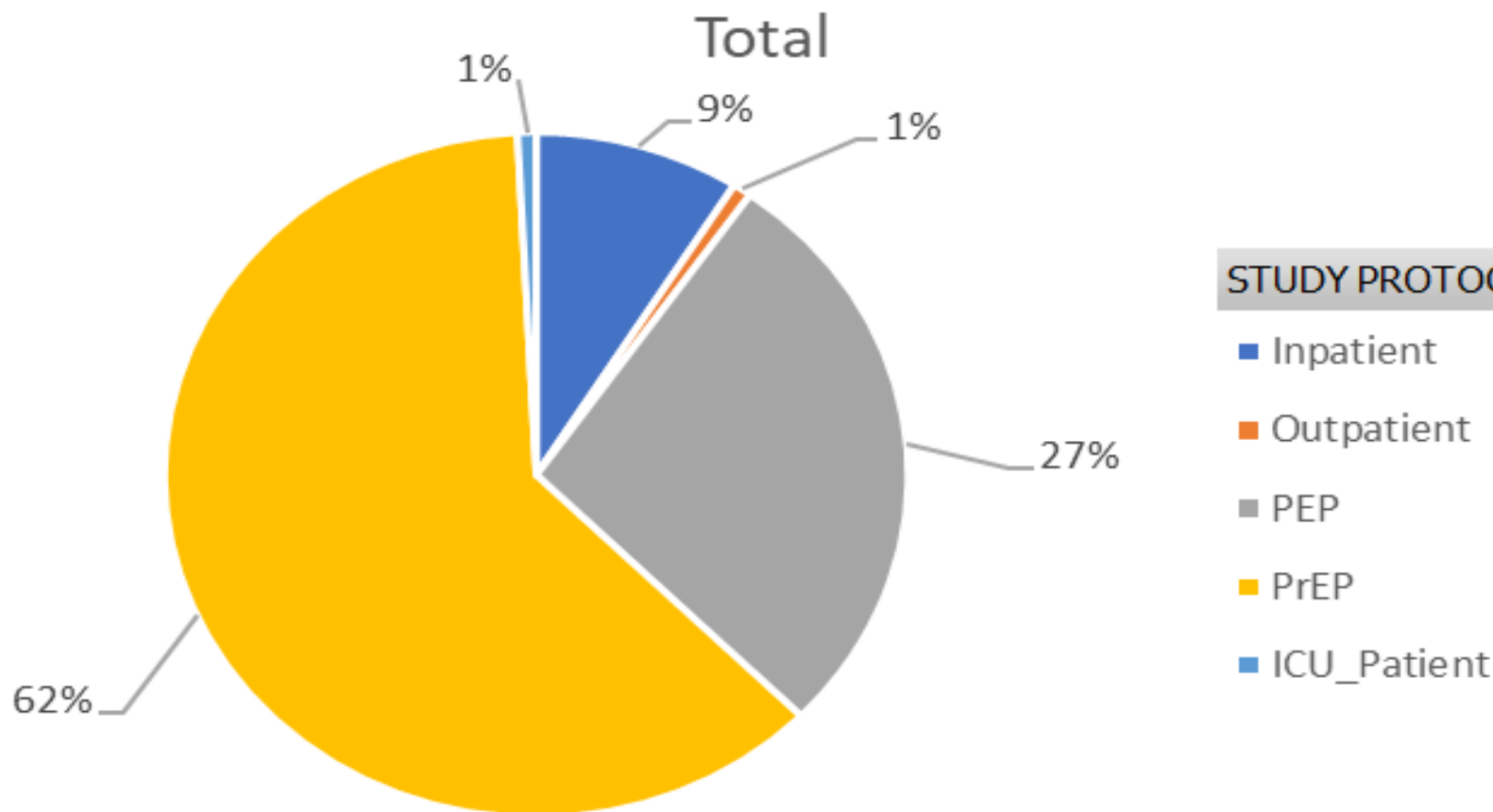


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FREQUENCY CHART

Frequency



**TABLE 2 – LABORATORY TESTING FOR COVID-19:**

CLASSIFICATION	LABORATORY TESTED (n)	NON-TESTED (n)	ONLINE TESTED - AWAITING LABORATORY TESTING (2)
<i>PrEP</i>	<i>NIL</i>	<i>76</i>	<i>2</i>
<i>PEP</i>	<i>NIL</i>	<i>32</i>	<i>3</i>
<i>OutPatient (U.K. Nurse)</i>	<i>1</i>	<i>-</i>	<i>-</i>
<i>Inpatient / Isolation Center (Oyo State Isolation Center)</i>	<i>11</i>	<i>-</i>	<i>-</i>
<i>Critical Care / Ventilator Patient (Canada)</i>	<i>1</i>	<i>-</i>	<i>-</i>
TOTAL	13	105	5



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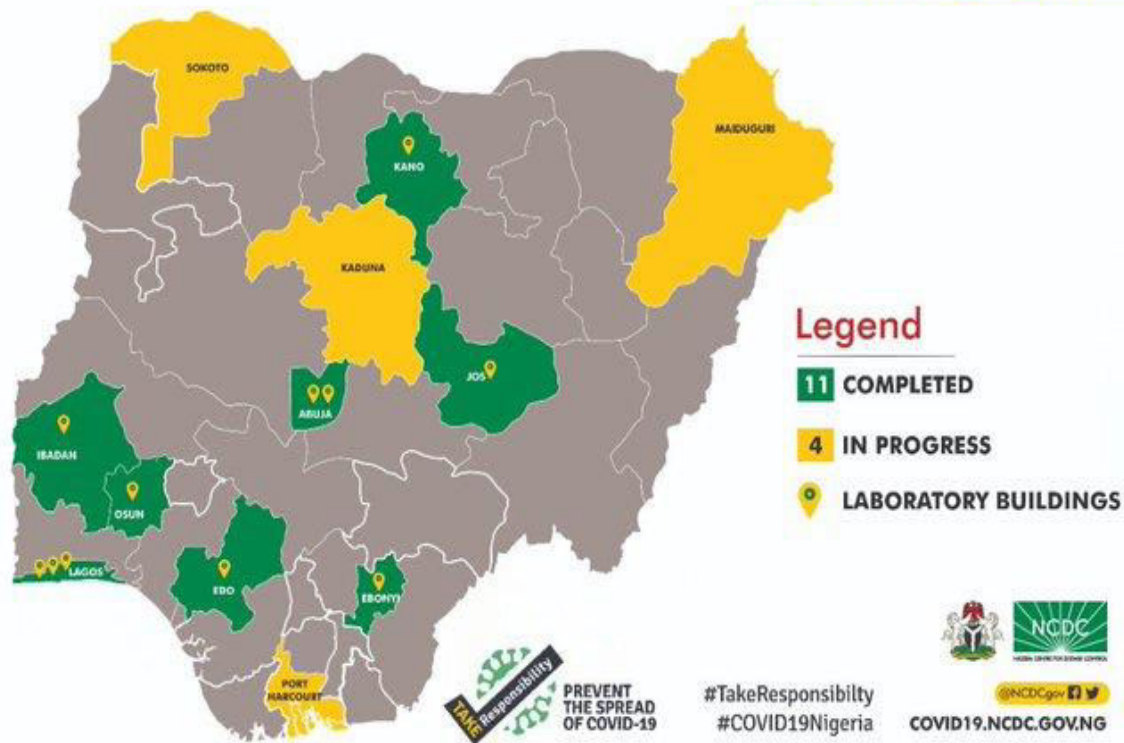
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OBJECTIVES

Our objective is to work alongside with governments of Africa and other Health Stakeholders in the continent to join hands in reducing and eliminating the spread of the COVID-19 virus through Hypothesis Testing of our Study Protocol, dovetailing into RCTs.

NCDC MOLECULAR LABORATORY NETWORK

As at 11th April, 2020



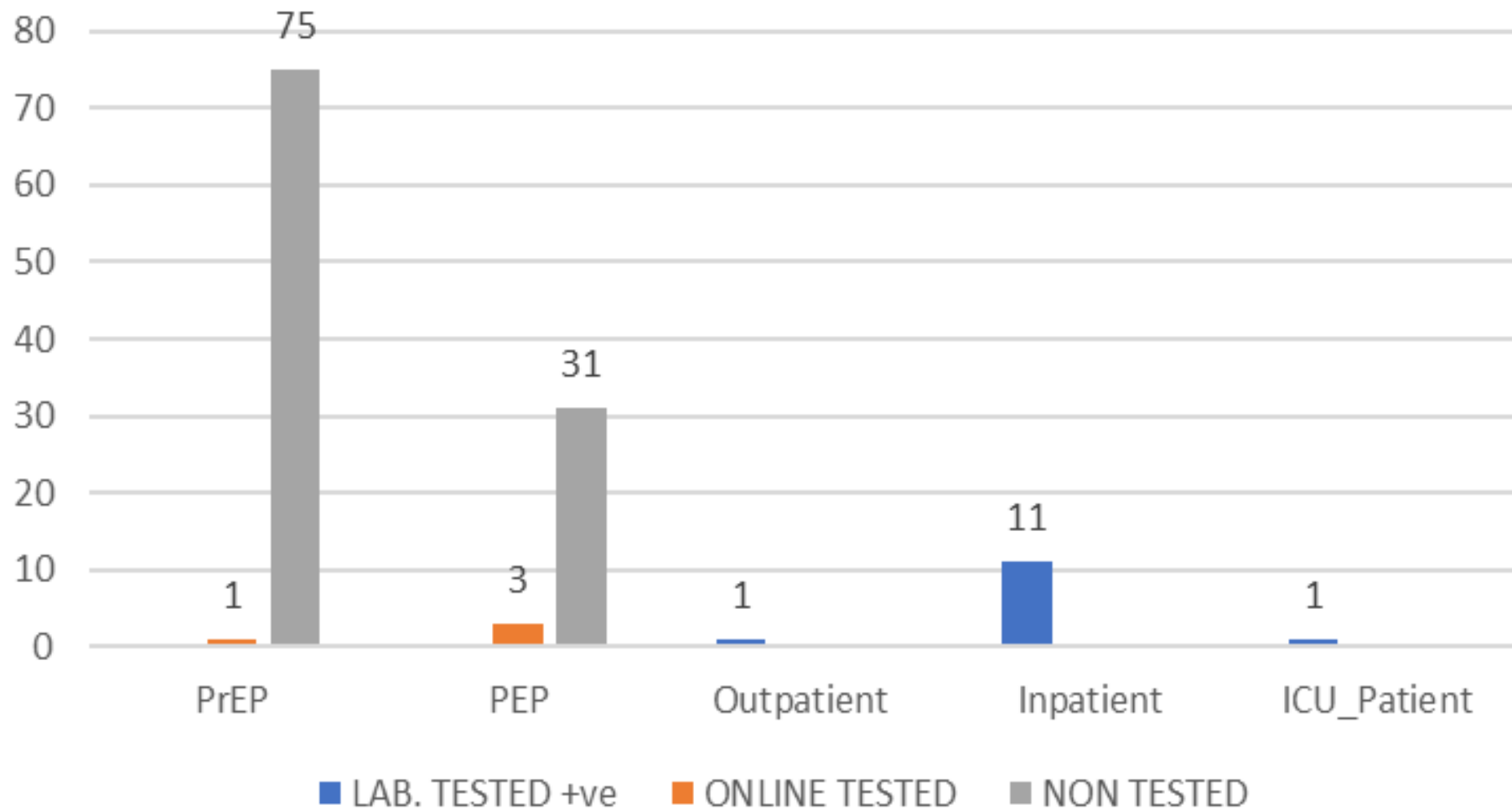
Map of Nigeria showing COVID-19 Testing Centres by States

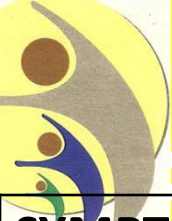
<https://twitter.com/NCDCgov/status/1249062083032944640/photo/1>

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COVID-19 TESTING

Labouratory Testing For Covid-19





SYMPTOMS AND TESTING STRATIFICATION

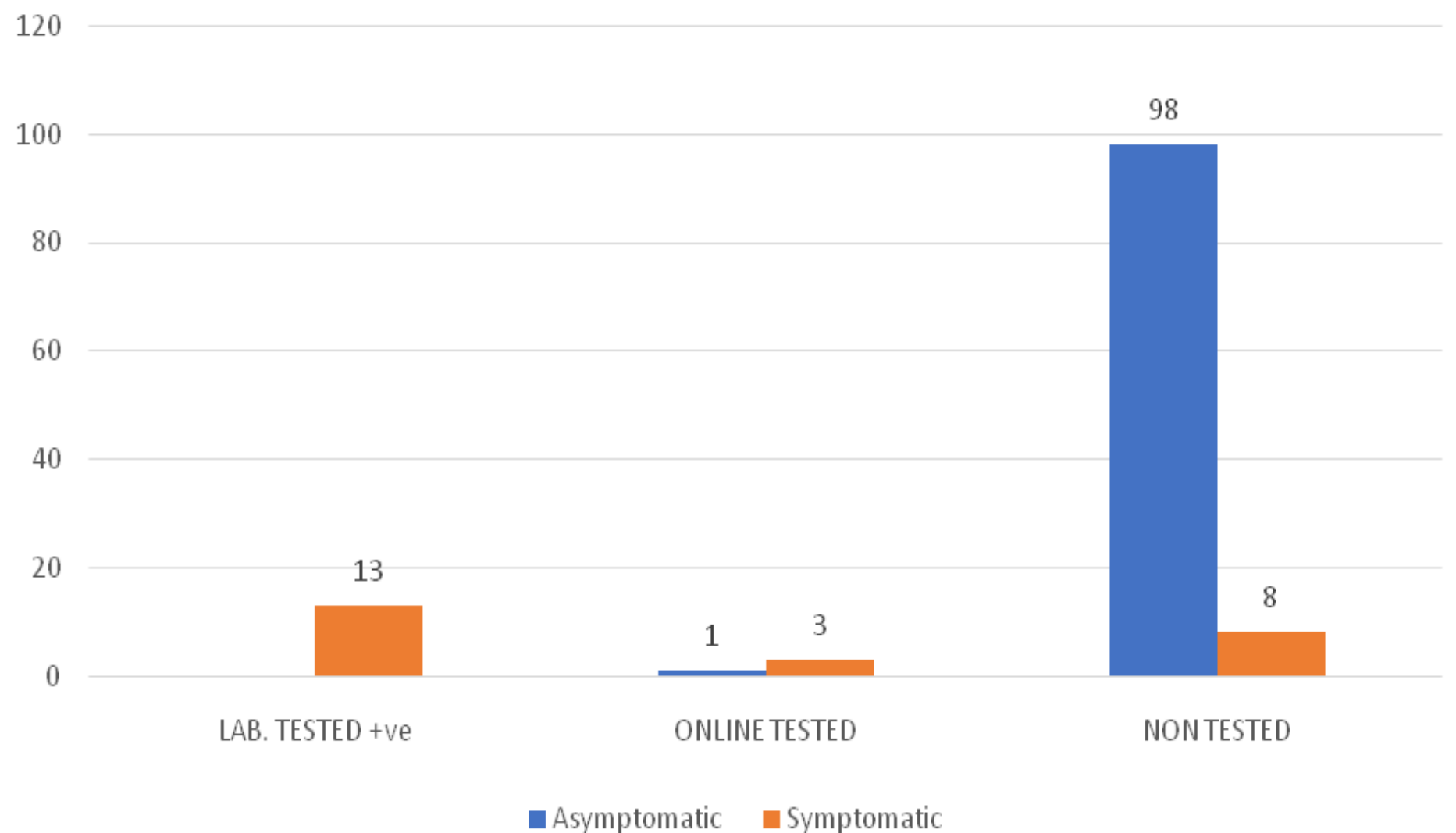
SYMPTOMS & TESTING STRATIFICATION	Number (n)	Comments - AFTER
<i>SYMPTOMATIC, ONLINE TESTED, Awaiting Laboratory Test</i>	3	<i>General Public – Awaiting Laboratory Test for 3 weeks but now symptom free</i>
<i>SYMPTOMATIC NOT LABORATORY TESTED</i>	8	<i>4 Frontline Workers, 4 Frontline Healthcare Workers. No Symptoms</i>
<i>SYMPTOMATIC, LABORATORY TESTED POSITIVE</i>	13	<i>1 inpatient in Canada, 1 Self Quarantined HCW in the UK, 11 Isolation Center inpatients in Nigeria. No Symptoms.</i>
TOTAL	24	COVID-19 Free 100% NIL mortality NIL morbidity
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TABLE 3A – SYMPTOM OUTCOMES ASSESSMENT BEFORE AND AFTER USE OF LWI CHLOROQUINE AND HYDROXYCHLOROQUINE FOR COVID-19 PROPHYLAXIS:

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Symptomology Table

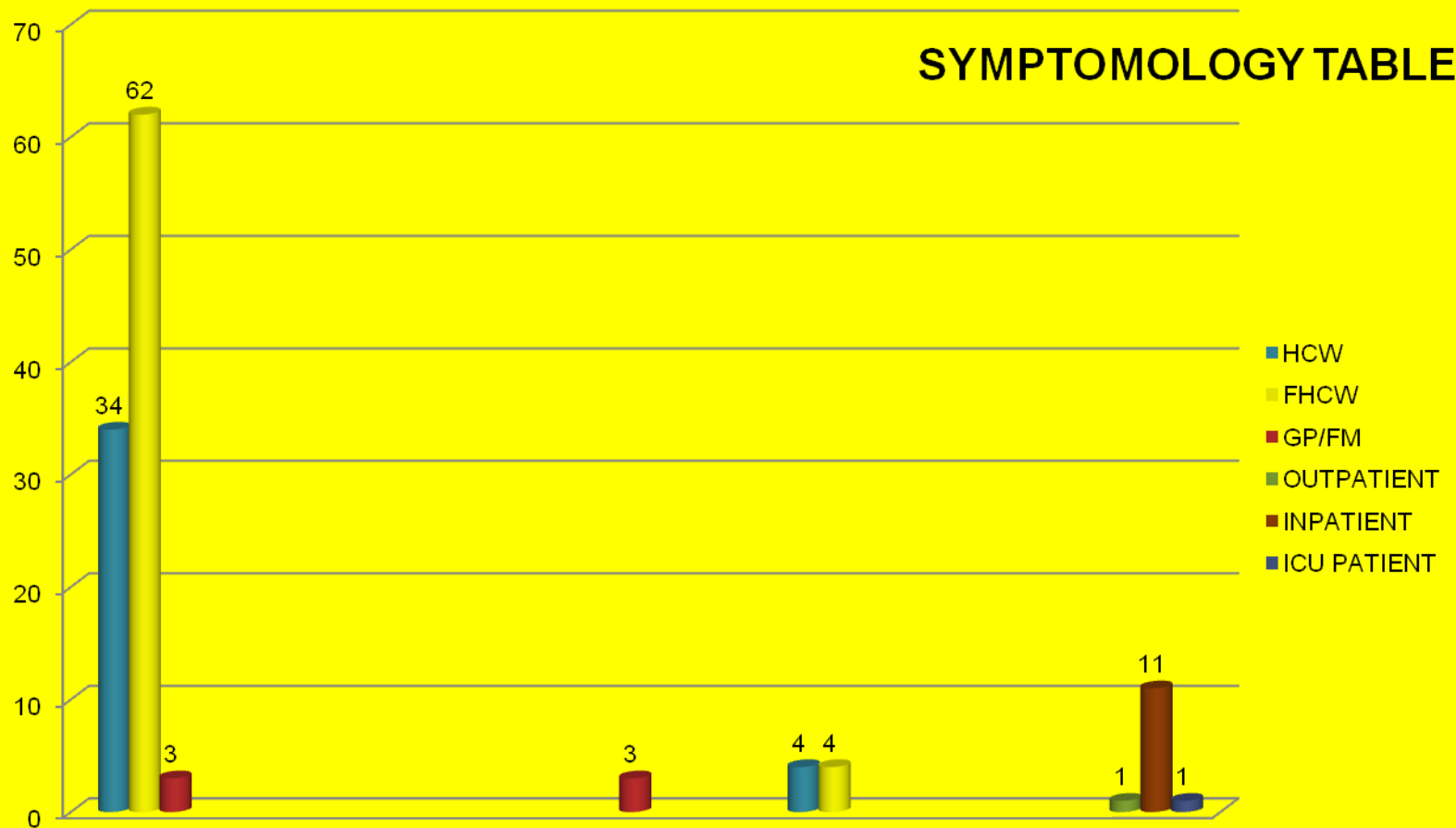




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TABLE 3B – SYMPTOM OUTCOMES ASSESSMENT BEFORE AND AFTER USE OF CHLOROQUINE AND HYDROXYCHLOROQUINE FOR COVID-19 PROPHYLAXIS:



**TABLE 4– OUTCOMES OF PRE-EXPOSURE PROPHYLAXIS
USING CHLOROQUINE / HYDROXYCHLOROQUINE FOR
COVID-19 PRE EMPTIVE-THERAPY:**

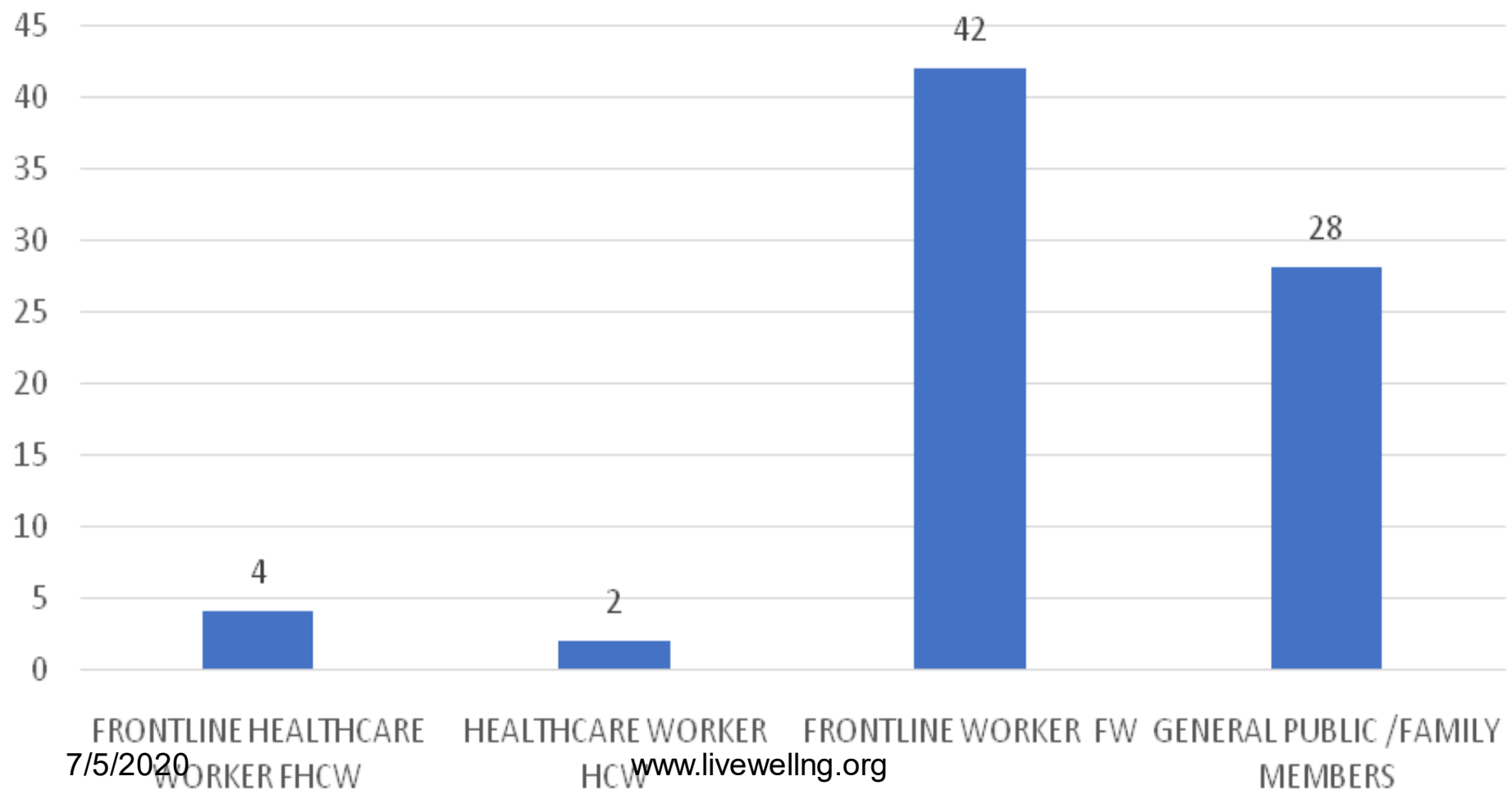
CATEGORY	PrEP Pre Exposure Prophylaxis (n)	Post-Lockdown/6 weeks after	Comments
<i>FRONTLINE HEALTHCARE WORKER FHCW</i>	<i>4</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free</i>
<i>HEALTHCARE WORKER HCW</i>	<i>2</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free</i>
<i>FRONTLINE WORKER FW</i>	<i>42</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free (22-man Cohort of Security men and 20 Bankers)</i>
<i>GENERAL PUBLIC /FAMILY MEMBERS</i>	<i>28</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free</i>
<i>TOTAL on PrEP</i>	<i>76</i>	<i>Post-PrEP Post-Lockdown Symptom free after 6 weeks</i>	



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PrEP Pre Exposure Prophylaxis (n)



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**TABLE 5 – OUTCOMES OF POST EXPOSURE PROPHYLAXIS USING
CHLOROQUINE / HYDROXYCHLOROQUINE FOR COVID-19
PROPHYLAXIS**

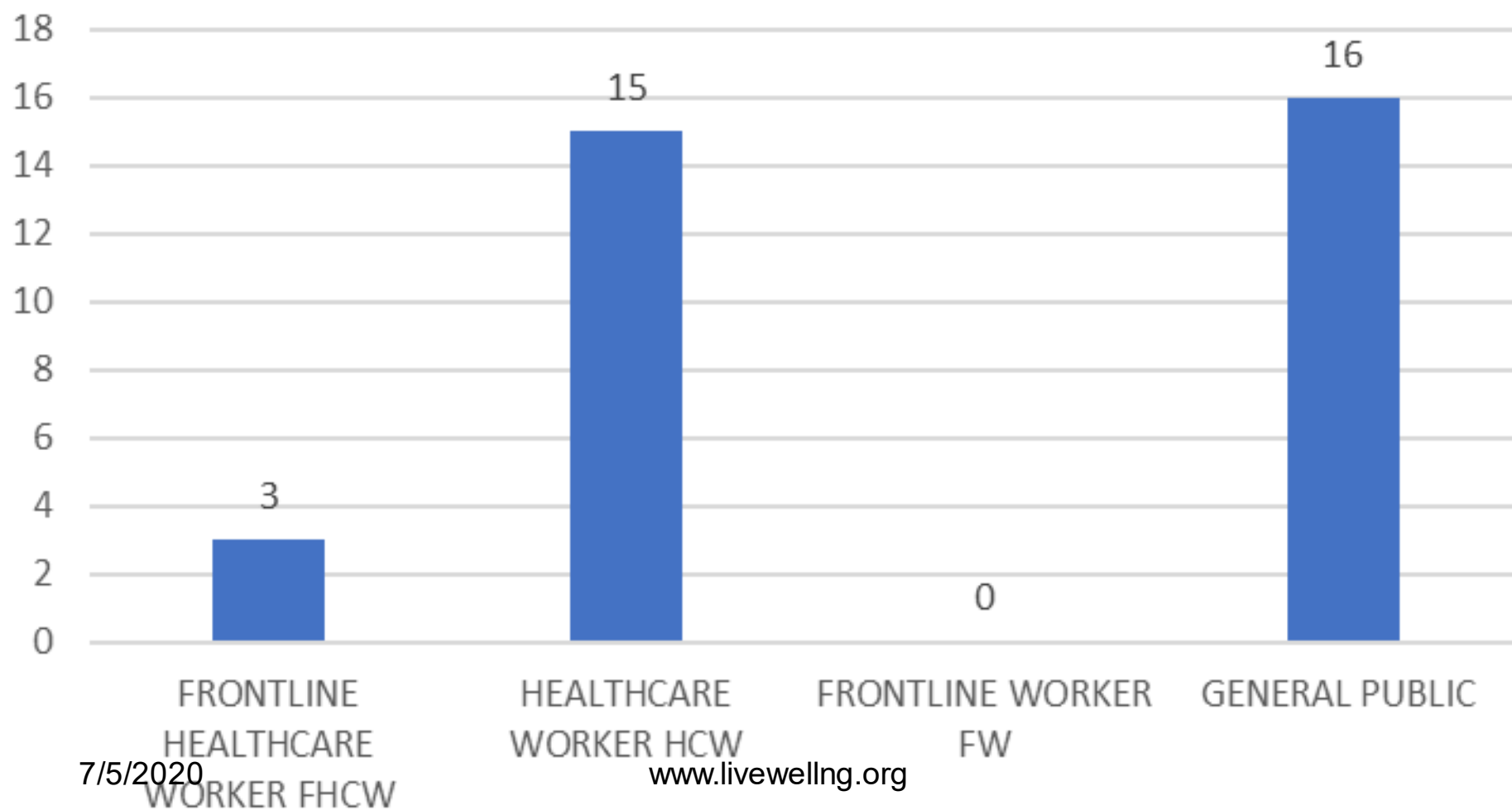
CATEGORY	PEP Post Exposure Prophylaxis	Post-Lockdown/6 weeks after	Comments
<i>FRONTLINE HEALTHCARE WORKER FHCW</i>	<i>3</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free (3 Isolation Center Staffers)</i>
<i>HEALTHCARE WORKER HCW</i>	<i>15</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free (15 Community Pharmacists)</i>
<i>FRONTLINE WORKER FW</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>GENERAL PUBLIC</i>	<i>16</i>	<i>NIL SYMPTOMS</i>	<i>COVID-19 Free</i> <i>* 2 persons awaited Laboratory Testing after symptoms but are now symptom free</i>
<i>TOTAL on PEP</i>	<i>34</i>	<i>Post-PEP Post-Lockdown Symptom Free after 6 weeks</i>	



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PEP Post Exposure Prophylaxis



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EMPIRICAL DATA

- Kaduna State – *Positive feedback from State Government, adopting the protocol for trial*
- Bauchi State - *Positive feedback from State Official, adopting the protocol after debates* <https://www.premiumtimesng.com/coronavirus/390660-coronavirus-ive-authorized-use-of-chloroquine-for-treatment-of-covid-19-bauchi-governor.html>
- Chevron- *Self isolated Traveller recovered after PEP upon displaying symptoms and advised by the physician*
- Canada - *an ICU patient discharged after fully recovering on quinine i.v. Instituted by her physician*
- United Kingdom – *Self Quarantined Nurse fully recovered after PEP*
- Lagos cohorts – *Group PrEP, Self PrEP, PEP*



contd

- Oyo State Isolation Center – 11 patients all fully recovered and discharged
- Lilly Hospital, Warri
- FMC Keffi
- Faith Multiplex Hospital, Benin City
- Babcock University, Ilishan
- Plateau State Government, Jos
- Lagos University Teaching Hospital LUTH
- AKTH Akwa Ibom State
-and a host of others



NEXT STEPS

- Collate the Data
- Call for Partner Institutions and Sponsors
- Collaborate with Governments
- Institute RCTs
- Drive Data and Publications
- More Research and
- Validation / Authentication



CONCLUSION:

- CQ and HCQ Prophylaxis works perfectly for COVID-19 Prophylaxis as all clients are COVID-19 Free, after 6 weeks post-lockdown
- None of the 110 clients placed on prophylaxis has progressed into COVID-19 in 6 weeks Post-Lockdown; none of them is symptomatic.
- CQ/HCQ is relevant for Ambulatory care as the Laboratory Tested Positive Healthcare Worker on Self Quarantine who was treated with CQ is fully recovered, up to 6 weeks post-lockdown with no replase, and having tested negative twice post treatment.
- There is 100% positive outcome and zero deaths with 4-Aminoquinolines in COVID-19 Response. CQ/HCQ



CONCLUSION *(contd)*

- CQ/HCQ is also relevant for Inpatient care as the 11 Laboratory Tested Positive Patients placed on admission at the COVID-19 Isolation Center who were treated with CQ are all fully recovered, up to 6 weeks post-lockdown with no relapse, and having tested negative twice post treatment.
- Quinine works in advanced COVID-19 as the Single Laboratory Tested Positive client on the ventilator, has fully recovered after Treatment with I.V. Quinine and is still symptom free 6 weeks post-lockdown.



CONCLUSION *(contd)*

- CQ / HCQ Prophylaxis is very effective in COVID-19 Prophylaxis. Pre- and Post-Exposure
- **Up to 6 weeks Post-Lockdown, no symptoms were noticeable in all prophylaxis uptakers**
- CQ/HCQ is effective in early COVID-19 but more studies will be needed due to the small sample size
- Quinine is effective in advanced COVID-19 including ICU Patients. More studies needed



CONCLUSION *(contd)*

- Post-Treatment Intermittent Prophylaxis is recommended in COVID-19. Studies are needed
- Described by many as the ‘Cheap African Drug’, CQ/HCQ is Strongly recommended, to save the world from the COVID-19 Pandemic
- LWI Study Protocols for COVID-19 Response are **AFFORDABLE, SCALABLE, REPLICABLE** for all Africans and the Diaspora – Indeed, BLM!



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Thank You *for listening*



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