



## Inequalities in COVID-19 Vaccination; a Call for Global Community Concern

Jefferson Asare Danquah<sup>1</sup>, Albert Opoku<sup>2\*</sup>, Thomas Boansi Gyamerah<sup>3</sup>,  
Monica Pili Bernard<sup>4</sup>, Prince Twene<sup>5</sup> and Rebecca Kuma<sup>6</sup>

<sup>1</sup>University of Aberdeen, UK, MSc Global Health and Management, National AIDS/STI Control Programme, Ghana.

<sup>2</sup>Nursing and Midwifery Training College, Tapa, Trinity Hospital, Pankrono, Kumasi, Ghana.

<sup>3</sup>Nursing and Midwifery Training College, Asankrangwa, Ghana.

<sup>4</sup>Global Health and Management, University of Aberdeen, UK, Healthy Shield Foundation, Tanzania.

<sup>5</sup>Food and Drugs Authority, Ghana.

<sup>6</sup>Ga East Municipal Hospital, Ghana.

### Authors' contributions

This work was carried out in collaboration among all authors. Author JAS designed the study and did the literature review with authors AO TBG, and MPB. Authors AO and JAS wrote the protocol and the first draft of the manuscript. Authors PT and RK edited the manuscript. All authors read and approved the final manuscript

### Article Information

#### Editor(s):

(1) Prof. Cynthia Aracely Alvizo Báez, Autonomous University of Nuevo Leon, Mexico.

(2) Dr. Wagner Loyola, Brazilian Agricultural Research Corporation, Brazil.

(3) Dr. Jaffu Othniel Chilongola, Tumaini University, Tanzania.

#### Reviewers:

(1) Ivy Deirdre Mangkau, University College of Technology Sarawak (UCTS), Malaysia.

(2) Abhilasha Kapoor, University College of Medical Sciences and GTB Hospital, India.

(3) Rian Ka Praja, Khon Kaen University, Thailand.

(4) R. Sankaranarayanan, Mepco Schlenk Engineering College (Autonomous), India.

(5) Vijay Kumar Barwal, Indira Gandhi Medical College and Hospital, India.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/68275>

Mini-review Article

Received 25 April 2021

Accepted 09 June 2021

Published 15 June 2021

### ABSTRACT

**Introduction:** Universal and global accessibility to COVID-19 vaccination is a vital tool for the reduction in the rate of infection, the severity of symptoms, the occurrence of death, and the acquiring of herd immunity. This is the major strategy in the reduction of the global socio-economic effects aimed by all countries. To bring this pandemic to an end, a large share of the world needs to be immune to the COVID-19 virus. The safest way to achieve this is with equal access and distribution of the COVID-19 vaccine through global cooperation.

\*Corresponding author: E-mail: [albertopk2000@yahoo.co.uk](mailto:albertopk2000@yahoo.co.uk);

**Objectives:** The objective of this article was to review literature to raise the awares globally to ensure that all nations whether rich or poor get vaccination for COVID 19.

**Conclusion:** The debate about the global plan for ensuring equal access to vaccines should include people of all race, socioeconomic, geographical, and political trend to achieve desirable success.

*Keywords: Vaccination; COVID-19; global community.*

## 1. INTRODUCTION

The organisation of novel vaccines, during a global pandemic, accompanies constraints in beginning antibody supply, which requires prioritization of populace gatherings [1]. With regard to COVID-19 vaccines, the significant test is the disparity of distribution of the novel vaccines. The dire choices concern whom, which nations, and what landmass should be inoculated first which is an intricate general medical problem [2].

The current trend of unequal accessibility to COVID-19 vaccines which is determined by a country's economic status, income levels, share of purchased doses, geographical location, race and immigration status, if unregulated will be detrimental to the efforts and gains being made to overcome this pandemic. The high income countries representing only a fifth of the worldwide grown-up populace, have bought the greater part of all the vaccine's portions, bringing about the differences between grown-up populace offer and dosages bought by other remaining countries, with vaccination rate of 25 times more than those within the lowest income brackets making the wealthiest 27 countries receiving 38.6% of the vaccines [3].

More than 869 million doses have been administered across 155 countries covering 5% of global population [4], and it remains the world's biggest vaccination campaign in history with a daily vaccination rate of an average of 17.4 million doses, the distribution is lopsided.

In the U.S., 202 million doses have been administered on an average of 3.35 million doses per day, but unfortunately, the same cannot be said about the other part of the world [5].

As can be seen in the global distribution map (Fig. 1), the global delivery of vaccines remains shockingly unbalanced. Nearly one in every four people in high-income countries have received the COVID-19 vaccine as against one in every 500 people in low-income countries according to WHO. High-income countries such as the United States, the United Kingdom, and Israel has

received more than half of the 869 million doses worldwide, while the poorest countries received just 0.1 per cent of the doses [6].

## 2. ALTERNATIVE SOLUTION

The main challenge while overcoming the novel coronavirus will be ensuring the equitable access, especially in the countries that do not have universal health coverage and the financial strength to compete logistically.

Providing universal global access to COVID-19 vaccinations, which is vital for reducing morbidity and mortality rate and contributing to global population immunity, is a major contributing factor that could help jeopardize the pandemic's power. The following strategies has been suggested;

1. The latest COVAX program introduced by the WHO needs the support of wealthy nations to promote inclusion and equal vaccine coverage for all the poor countries, taking into account the disadvantaged, underrepresented, and oppressed communities.
2. Stronger cooperation between stakeholders as well as government, academia, researchers, suppliers, and multilateral partners should be intense in all part of the world.
3. Africa, Asia and Middle East governments should step up their efforts to combat COVID-19 in terms of accurate data generation and estimates, national vaccination coordination and Socio-economic Support for its citizenry.
4. Governments should own up to their responsibilities and should provide funds to the local scientists and researchers in order to scale up the vaccine research on the various deprived continents.
5. Partnership cooperation with manufacturers to share technologies and even waive their intellectual property rights will aid in adequate vaccine production.
6. Encouraging vaccine trade and redistribution among the countries who

have purchased an unethical surplus of vaccine doses.

### 3. WORLD HEALTH ORGANISATION STRATEGY ON INEQUALITIES

Currently, the major intervention to curtail the inequalities, is the introduction of a strategy known as the COVAX program by the WHO, which aims to make vaccines accessible to the developing countries. More than 38 million doses have been shipped to over 100 countries in less than a year. COVAX plans to provide over two billion doses to 190 countries. So far, nearly 900 million doses have been secured through various programs, which is enough to vaccinate roughly 30% of Africa's 1.3 billion population this year. This is a reverse of vaccine inequality and vaccine nationalism which will fuel the scarcity of vaccines. A me-first strategy would be counterproductive, as it would promote hoarding and prolong the pandemic [7]. The need to urgently support this global initiative to promote universal access, is of much importance since it has made massive strides in solving the issues of inequalities amid the pandemic.

Below is a graphical presentation (Fig. 2) of the economic income level of countries and the

percentage of global age population distribution as against the percentage of covid vaccines purchased and progress of COVAX distribution program.

### 4. BILATERAL AGREEMENTS AND COOPERATION

Though there is an evidence of vaccine hoarding among high-income countries but also there is an urgent need to encourage and promote vaccine donation by these countries [8].

Below is a graph (Fig. 3) to indicate the number of doses being purchased by the high-income economies.

The graph above shows unequal proportional access to the COVID 19 vaccines. There is then a need to encourage cooperation among these countries to promote vaccine donation. Currently, China has donated 50,000 shorts of Sinopharm vaccines to 53 countries. Making countries such as Philippines, Pakistan, Indonesia, Lebanon and some African countries have now been able to roll out their vaccination programs [9]. It is therefore commendable for countries who have bought the vaccines in excess need to freely donate to the low income countries to improve vaccine access and equity.

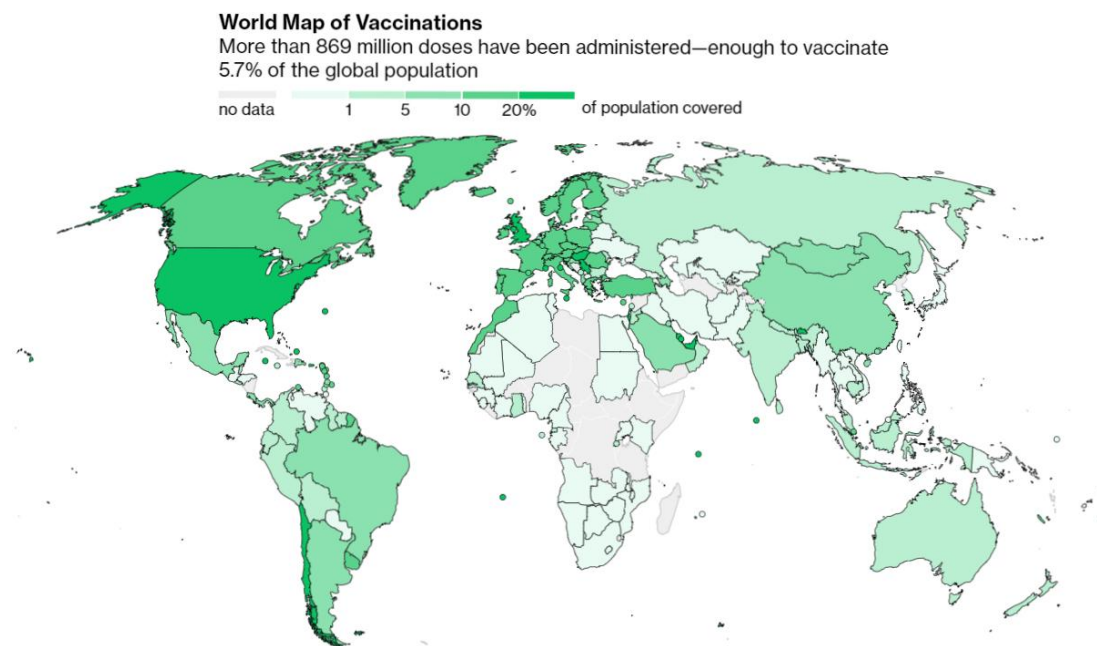


Fig. 1. World map showing distribution of doses of vaccine administered

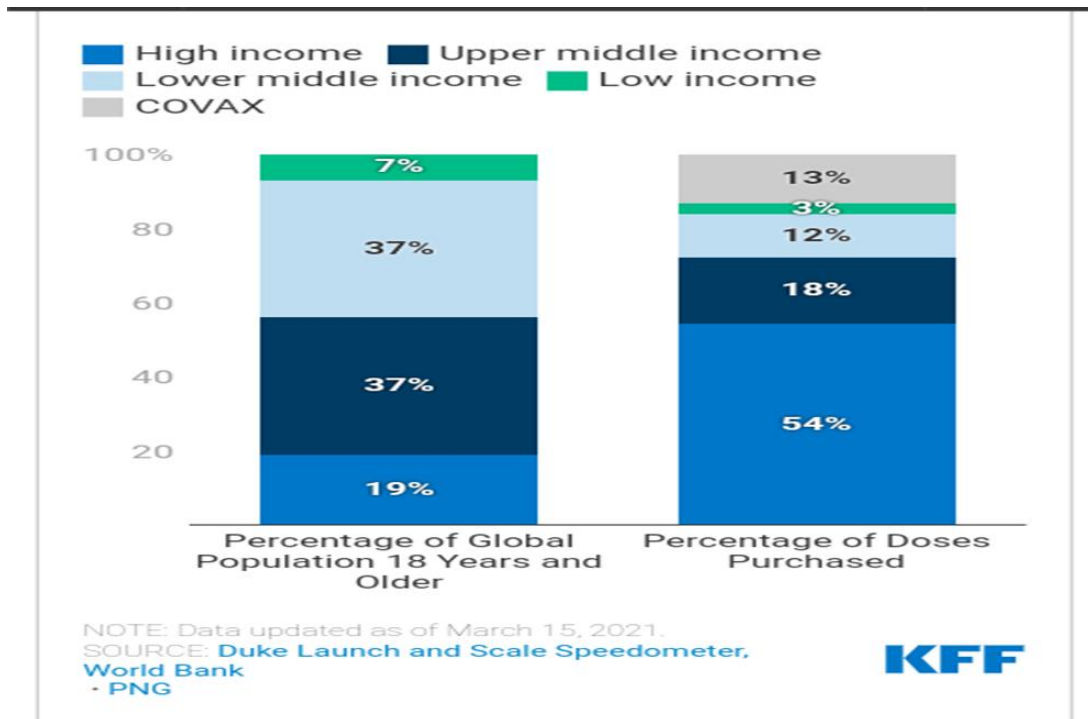


Fig. 2 – 2a. Without COVAX redistribution Fig. 2b. With COVAX redistribution

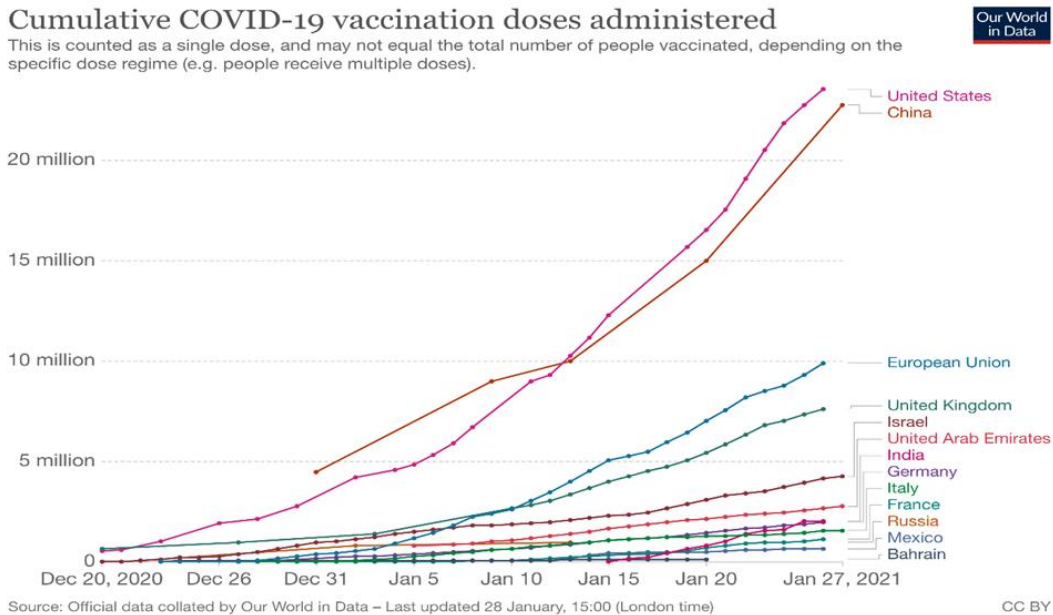


Fig. 3. Vaccine Doses Purchased by High Income Level countries

### 5. POLICY IMPLICATION

Recognising race and immigrational status inequalities during this pandemic, is a key tool for

eradicating the coronavirus. Various countries and territories should endeavour to carry out vaccination programmes devoid of immigrational status, race and religious orientation.

A case of Israelis' refusal to vaccinate non-citizens in Palestinian territories offers a stark illustration of the divide as the world steps up what is already on track to become a highly unequal vaccine drive, Israel shipped Pfizer/BioNTech vaccine batches deep into the West Bank, however, they only distributed to Jewish settlers and more than half (5.3 million) of its residents have been vaccinated but meanwhile not the nearly 2.7 million Palestinians who live nearby west bank had access to the vaccines. Even young and healthy Israelis who came to the clinics are sometimes compensated with surplus stock to prevent wasting unused vials. This trend will have a negative effect on Israel's target of herd immunity, keeping infection rates high [10].

The focus on vaccine nationalism will aid the coronavirus's global spread, allowing further opportunities for vaccine-resistant variants to evolve and Covid-19 outbreaks to resurface, even in developed countries.

In England, there is more pressing concerns of vaccine equity as data show substantially lower rates of COVID-19 vaccination among the over 80s in the ethnic minority with the white people receiving 42.5%, black people 20.5% and deprived communities (least deprived 44.7%, most deprived 37.9%) as at 15 January 2021. Similar data from an NHS trust show lower COVID-19 vaccination rates among ethnic minority healthcare workers representing 70.9% in white workers, 58.5% in South Asian and 36.8% in black workers [11,12]. This has serious implications as the pandemic continues to have a disproportionate effect on people from ethnic minorities, with higher COVID-19 morbidity and mortality and greater adverse socioeconomic consequences [13].

### **5.1 Policy implication focus on Africans and Asia**

Costs associated with COVID-19 diagnosis and care have the potential to exacerbate [14]. In light of the likelihood of the vaccine and the need for Africa as a continent to have access to and its use, remains a serious threat to global health, the question remains:

Who will pay for Africa?

Inequality with antiretroviral drugs, resulting in the deaths of millions. Raise serious concerns among African governments and its over, 1.341billion population [15] about the potential

risk posed by COVID-19 due to the unavailability of vaccines, based on previous experience.

With regards to these previous indications, it has become necessary for this policy to be implemented to its fullest and ensure several African countries not face the significant logistical challenges in implementing and delivering of COVID vaccines [16]. This needs a Global Strategy to overcome the world health threat.

In the case of lower-middle-income economies in Asia and the Middle East which have been heavily hit by this pandemic with 33,434,000 infections and 464,000 death so far recorded, have India currently leading the world in the daily average number of new infections of 204,186 and 1,125 death [10].

The donation of vaccines among countries such as India, Myanmar, Ecuador, and Indonesia, among the poorest of the middle-income nations will be the greatest milestone in this fight against the world's biggest pandemic.

## **6. CONCLUSION**

The debate about the global plan for ensuring equal access to vaccines should include people of all race, socioeconomic, geographical, and political trend to achieve desirable success.

The COVID-19 pandemic has overwhelmingly affected our already disadvantaged social classes. Emphatically, world leaders and heads of state around the world must choose between flattening the epidemiological curve or flattening the economy, policymakers must take concrete steps to resolve the emerging gaps in vaccine accessibility and distribution among High income and low-income economies with the help of multilateral organizations such as WHO.

## **CONSENT**

It is not applicable.

## **ETHICAL APPROVAL**

It is not applicable.

## **ACKNOWLEDGEMENTS**

The authors appreciate Dr. Aravinda Meera Guntupalli and Dr. Bhattacharya Sohinee both senior lecturers of University of

Aberdeen for their remarkable support towards this publication.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

### REFERENCES

1. France 24. Amnesty International condemns rich countries for hoarding Covid-19 vaccines; 2021. Retrieved March 24, 2021, Available:<https://www.france24.com/en/europe/20210407-amnesty-condemns-rich-countries-for-hoarding-covid-19-vaccines>
2. Worldometers. Africa's Population; 2020. Retrieved April 19, 2021 Available:<https://www.worldometers.info>
3. Reuters Neha A, Shilpa J, Alasdair P, Francis M; 2021. Retrieved April 18, 2021 Available:<https://www.reuters.com/world/india/indias-coronavirus-infections-cross-18-million-2021-04-29>
4. Fenton-Harvey J. Analysis - The consequences of global COVID vaccine inequality; 2021. Available:<https://www.aa.com.tr/en/analysis/analysis-the-consequences-of-global-covid-vaccine-inequality/2131116>
5. Tanne JH. Covid-19: Biden buys 200 million doses of vaccines to tackle supply shortages across US; 2021.
6. Global Times. Update: Chinese vaccines donated to 53 developing countries, exported to 27 nations; 2021. Retrieved March 01, 2021 Available:<https://www.globaltimes.cn/page/202103/1216920.shtml>
7. BBC NEWS. Coronavirus: WHO chief criticises 'shocking' global vaccine divide. Retrieved April 21, 2021 Available:<https://www.bbc.com/news/world-56698854>
8. Belluz J. Rich countries are hoarding Covid-19 vaccines; 2021. Retrieved March 18, 2021 Available:<https://www.vox.com/2021/1/29/2253908/rich-countries-hoarding-covid-19-vaccines>
9. Lucero-Prisno III DE, Ogunkola IO, Imo UF, Adebisi YA. Who Will Pay for the COVID-19 Vaccines for Africa?. The American Journal of Tropical Medicine and Hygiene; 2021. tpm201506.9
10. Campos-Matos I, Mandal S, Yates J, Ramsay M, Wilson J, Lim WS. Maximising benefit, reducing inequalities and ensuring deliverability: Prioritisation of COVID-19 vaccination in the UK. The Lancet Regional Health-Europe; 2021;10.
11. Razai MS, Kankam HK, Majeed A, Esmail A, Williams DR. Mitigating ethnic disparities in covid-19 and beyond. Bmj. 2021;372.11
12. Sellner J, Jenkins TM, von Oertzen TJ, Bassetti CL, Beghi E, Bereczki D, EAN Neuro COVID-19 Task Force. A plea for equitable global access to COVID-19 diagnostics, vaccination and therapy: The NeuroCOVID-19 Task Force of the European Academy of Neurology. European Journal of Neurology. 2021; 12.
13. Rouw A, Wexler A, Kates J, Michaud J. Global COVID-19 Vaccine Access: A Snapshot of Inequality; 2021. Retrieved March 22, 2021 Available:<https://www.kff.org/policy-watch/global-covid-19-vaccine-access-snapshot-of-inequality>
14. The Guardian. (n.d.). Palestinians excluded from Israeli Covid vaccine rollout as jabs go to settlers. Available:<https://www.theguardian.com/world/2021/jan/03/palestinians-excluded-from-israeli-covid-vaccine-rollout-as-jabs-go-to-settlers>
15. MacKenna B, Curtis HJ, Morton CE, Inglesby P, Walker AJ, Morley J, Goldacre B; 2021.
16. Trends, regional variation, and clinical characteristics of COVID-19 vaccine recipients: a retrospective cohort study in 23.4 million patients using Open Safely. MedRxiv. 16.

© 2021 Asare Danquah et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

#### Peer-review history:

The peer review history for this paper can be accessed here:  
<http://www.sdiarticle4.com/review-history/68275>