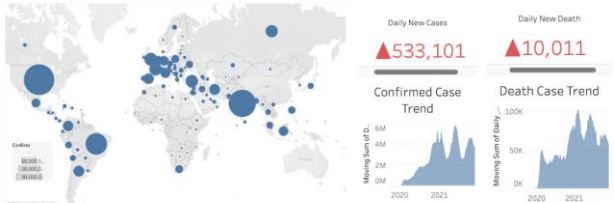


Authors: Zaynab, Z., Choung, Y., Cabrales, A. L. C., Mongpho, S. and Parvez, T.

Covid-19 Vaccine DYNAMICS

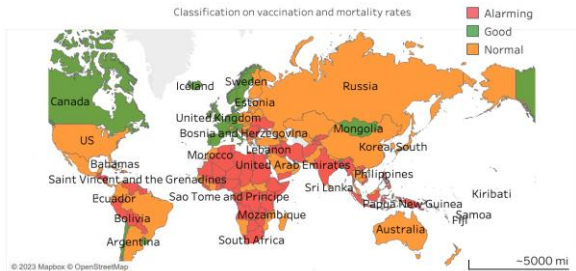
Team Pfizer was interested in understanding how the distribution of the vaccine improved over time and identifying any countries that may have a higher demand for the vaccine in the future. To achieve the detailed info, we analyze the dynamics of vaccine distribution for all vaccine manufacturers to gain insight into the effectiveness of the vaccines in preventing deaths and new confirmed cases.

Countries Hit Hardest by COVID-19



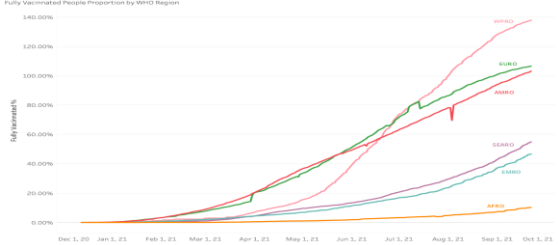
The daily new cases and deaths of COVID as of September 2022 were 533k and 10k, respectively. The top three countries with confirmed COVID cases are the United States, India, and Brazil.

Alarming Africa (AFRO)



The mortality rate is high in most African countries (AFRO), at more than 3%, and the number of fully vaccinated people is low, at less than 30%, which we classified as alarming (red color).

AFRO has the lowest fully vaccinated rate



The African Region (AFRO) has one of the lowest fully vaccinated rates; less than 10% of the population in the African Region had been fully vaccinated. This was due to a combination of factors, including limited vaccine supplies, logistical challenges, and vaccine hesitancy in some communities (*COVID-19 Vaccines*, 2023).

Recommendation

- We found the African continent at high risk for COVID-19, and to ensure they have access to vaccines, suggesting a partnership with MSF. MSF can work with local governments, health organizations, and community leaders to develop and implement vaccine distribution strategies tailored to each region's specific needs and challenges.
- Work with local non-profit institution who has extensive experience managing complex logistics in challenging environments, which can be critical for vaccine distribution in remote or hard-to-reach areas. To provide logistical support for vaccine delivery, storage, and administration (*Three Pfizer Partnerships Help Vaccinate More People in Africa Against COVID-19* / Pfizer, n.d.).
- Pfizer needs to implement Vaccine subsidies and donations to support global efforts to fight the COVID-19 pandemic. Help countries with limited resources to consider attracting grants and donations to support vaccine supply delays. This will help ensure that the Pfizer vaccine reaches more people in Africa, especially those at high risk of contracting COVID-19.
- Also, International NGOs (Non-Governmental Organizations) can play a vital role in supporting vaccine distribution efforts by providing technical expertise, community outreach and engagement, and logistical support. Pfizer can sign contracts with NGOs that collaborate closely with governments and other stakeholders to ensure vaccine distribution efforts align with national policies and priorities.

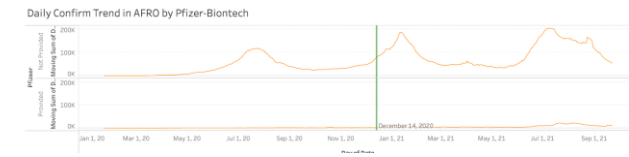
In conclusion, the Pfizer vaccine has significantly reduced the number of COVID-19 cases in Africa. However, much work still exists to ensure the vaccine reaches more people in Africa. Addressing the COVID-19 pandemic in Africa requires a collaborative effort from various stakeholders. By working together, we can combat the COVID-19 pandemic and protect the health and well-being of people in Africa and worldwide.

4 countries in Africa have Pfizer-BionTech vaccines.

Who Region	Provided	Not Provided
EURO	50	10
AMRO	39	14
WPRO	22	13
EMRO	18	4
SEARO	6	4
AFRO	4	42
Grand Total	139	87

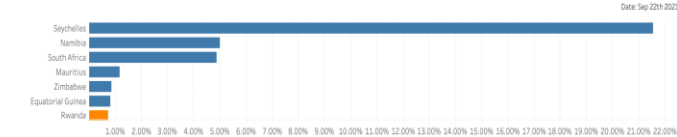
Pfizer-BionTech provided vaccines to 139 countries around the world. However, they provide vaccines in only four AFRO (Africa) countries.

7-day rolling calculation trend of new COVID cases in Africa



There is a clear difference in the trends of COVID-19 cases between countries with and without Pfizer vaccines. The 42 African countries without access to the vaccine have generally experienced two peaks in Jan and Jul. Whereas the four countries that have been supplied with the Pfizer vaccine have experienced a sharp increase in cases. This suggests that the Pfizer vaccine has had a significant impact on reducing the number of COVID-19 cases in these countries.

Seychelles's highest confirmed rate in Africa



Seychelles has the most confirmed cases among its population than any other country in Africa at 21% (*BBC News, 2021*).

The positive impact of the Pfizer vaccine



According to this dashboard, there is a noticeable difference in the trends of COVID-19 cases between countries that have access to the Pfizer vaccine and those that do not. Since the first Pfizer vaccine distribution started on December 14, 2020, the 42 African countries without access to the vaccine have generally experienced two peaks in January and July of 2021. Conversely, the four countries supplied with the Pfizer vaccine have experienced only one sharp increase in cases. These findings suggest that the Pfizer vaccine has played a significant role in reducing the number of COVID-19 cases in the countries that have been able to access it.