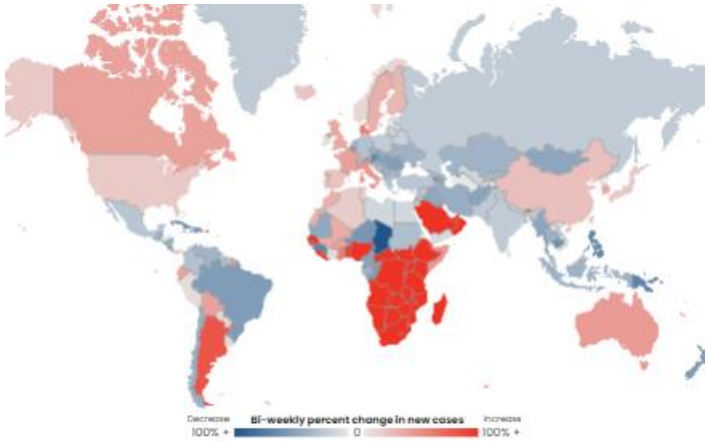
COVID-19 Update: Weeks 49-50

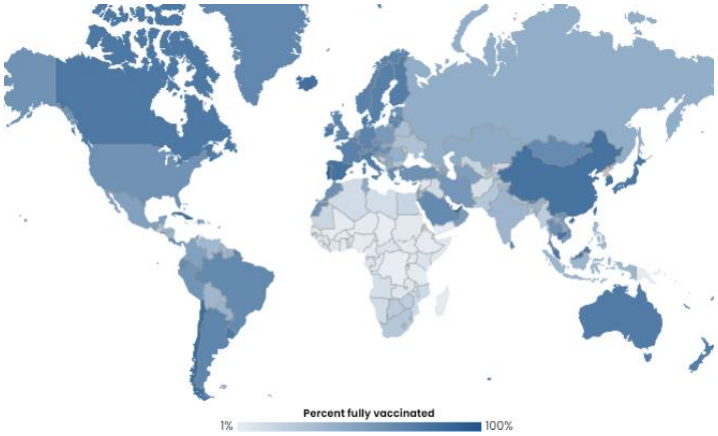
6 – 19 December 2021

Bi-weekly COVID-19 updates from IFRC focusing on the epidemiological trends and updated evidence are shared through the Health Help Desk. Additional external resources for deeper weekly or monthly subject-area analysis have also been added to the public access page on the Health Help Desk. Internal reports from the IFRC are available on IFRC Go page for the COVID-19 pandemic (including operational updates, immunization updates and updated figures by IFRC region). *The next update is scheduled for January 4th. 2022.*

Bi-weekly percent change in new cases

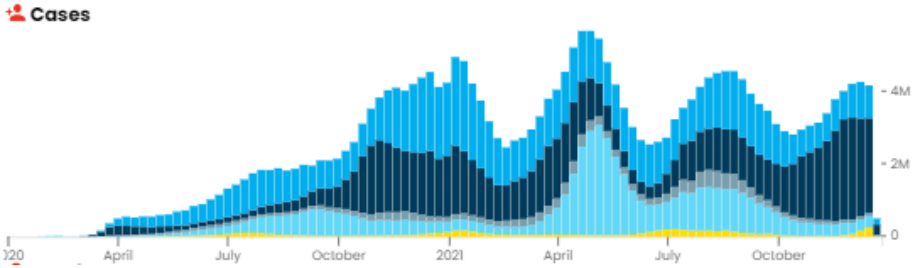


Percentage of population fully vaccinated



- **Globally there have been over 273 million cumulative cases and 5.3 million cumulative deaths of COVID-19 reported worldwide.**
- An estimated 56.8% of the global population has received at least one dose of the COVID-19 vaccine, with an estimated 46.4% fully vaccinated.
- **Only 7.6% of those living in low-income countries have had at least one dose of the COVID-19 vaccine**

Situation update & Risk Assessment



In **the past two weeks incidence of COVID-19 plateaued and has decreased slightly (by 5%) compared to the previous week.** Similarly global deaths from COVID-19 were reported to have declined by 10% compared to the previous week following a 10% increase in reported COVID-19 deaths the week before. Notably, the incidence of new reported cases remains very high globally with over 4 million new cases reported in the past week – an incidence level similar to the previous COVID-19 global peak in August. Not all regions reported decreasing trends, and the **Africa region once again reported over a 111% increase in new COVID-19 cases compared to the previous** week where they reported an increase in new cases by 79%. While the Africa region represents an estimated 4% of reported COVID-19 cases, it is also the region with the lowest coverage of COVID-19 vaccination and several countries are showing worrisome trends leading the region to report the most significant increases globally in the past two weeks. The United States also reached a new record, now reporting over 800,000 deaths due to COVID-19.

For further information or feedback please contact: Rachel Goodermote, with the Health and Care Department, IFRC

Secondary Impacts

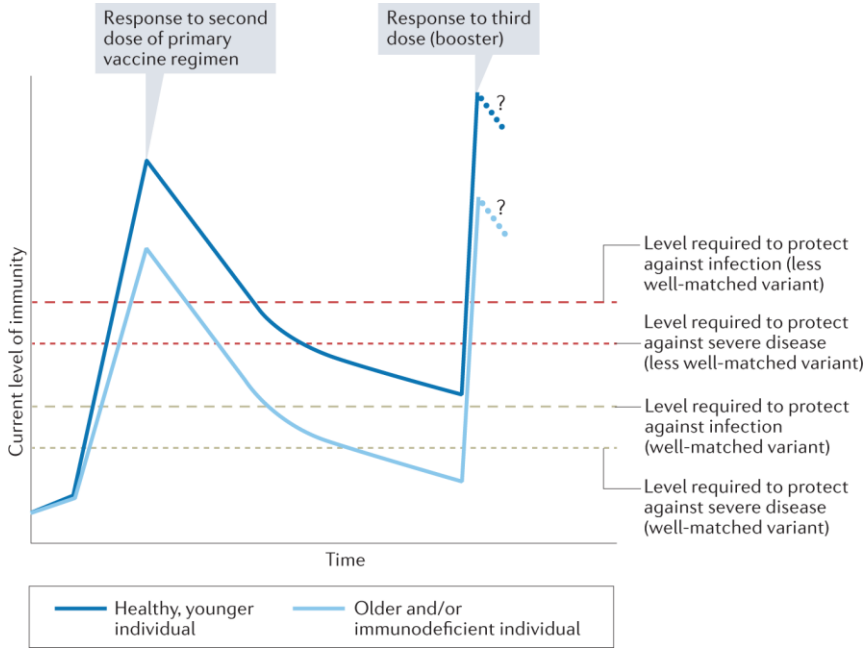
- Pandemic related school closures affected 1.6 billion learners (many did not have remote online options), exacerbated inequalities – especially among those with disabilities and resulted in a likely 24 million children at risk for never returning to school. While only an estimated 3% of government stimulus packages included schooling, estimated lifetime losses from the pandemic thus far have been estimated at 17 trillion USD (a 70% increase from estimates in 2020) (UNICEF & World Bank).
- Two new reports from the WHO and World Bank suggest that the progress towards the goal of Universal Health Coverage dropped during the pandemic, pushing more people into financial hardship due to medical costs, with more than half a billion people on the brink prior to the beginning of the pandemic, the number is expected to be much higher this year (WHO: Tracking Universal Health Coverage: 2021 Global monitoring report; WHO: Global monitoring report on financial protection in health 2021).

Vaccine & Treatment Equity

- A recent study led by Duke University found that global manufacturing supply is sufficient to reach 70% of the global population with COVID-19 vaccinations by the end of 2021, but unequal distribution has resulted in 56% of the world receiving at least one dose and only 7.2% of populations living in low-income countries having received at least one dose. Getting vaccinations to those who need them is much more complex than a manufacturing issue, as many countries face logistical challenges and cold chain issues as well as well as vaccine hesitancy and access issues.

Vaccine Safety and Efficacy

- Novavax has been approved by the EU commission to be used throughout the European Union following favourable recommendation from the European Medicines Agency (EMA). It is the first protein-based vaccine for COVID-19 to be approved and can be stored at regular refrigerator temperatures allowing for easier transport and distribution.
- Since even the most effective vaccines are never 100% effective against infection, there has been some confusion about vaccine efficacy, waning immunity and the differences between vaccine efficacy against severe disease and infection. An article in Nature has tried to highlight the evidence and what to consider, separating the age group 65+ years of age and younger age groups to show the potential benefits of vaccine boosters given evidence of waning immunity after six months. "Waning immunity" means different things among different groups and as noted in the model below has different risks The ***chart to the right*** gives a conceptual model on how to understand levels of immunity and risk of breakthrough infection



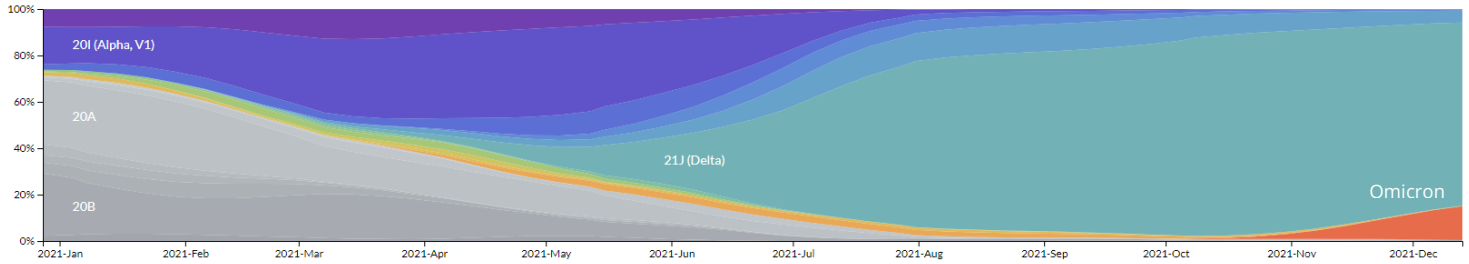
- The WHO updated its list of emergency use listing for the J&J Janssen vaccine on December 9th giving countries the option to choose to distribute it as a single or two dose offer 2-6 months apart. They also suggested that J&J Janssen vaccine could be used in combination with Pfizer vaccine doses to solicit an even stronger immune response, supporting mixing-and-matching vaccine options – something that should also be helpful to many countries who have a miss-match of supply.
- The USFDA updated its recommendations for the J&J Janssen to include warnings for those who have a history of thrombosis following vaccination – while the risk remains low, estimated in 1 out of 100,000 of those who received the vaccine, it can be potentially fatal. Those in the highest risk category were females between the ages of 30 and 49.
- A study in a US veterans hospital found that while both Pfizer BioNTech and Moderna vaccines had waning efficacy over time, Moderna recipients showed higher antibody levels over time than Pfizer BioNTech (CDC MMWR).

Vaccine Mixing

- A recent randomized trial found strong immune responses to vaccine boosters for Pfizer, Moderna, and AstraZenica, with slightly stronger responses with Pfizer and Moderna. The study also found mixing of vaccines was safe and well accepted by the majority of participants, leading to most policy makers to suggest the booster – with whichever option is available to those who are eligible (Lancet).
- Another study (pre-print) not yet peer-reviewed found that using the J&J-Janssen vaccine as a booster produced a slower and more sustained response to wild-type virus and Beta and Delta variants, while a Pfizer-BioNTech booster produced a faster and stronger response that dipped more quickly.

Variants of Concern or of Interest & Implications

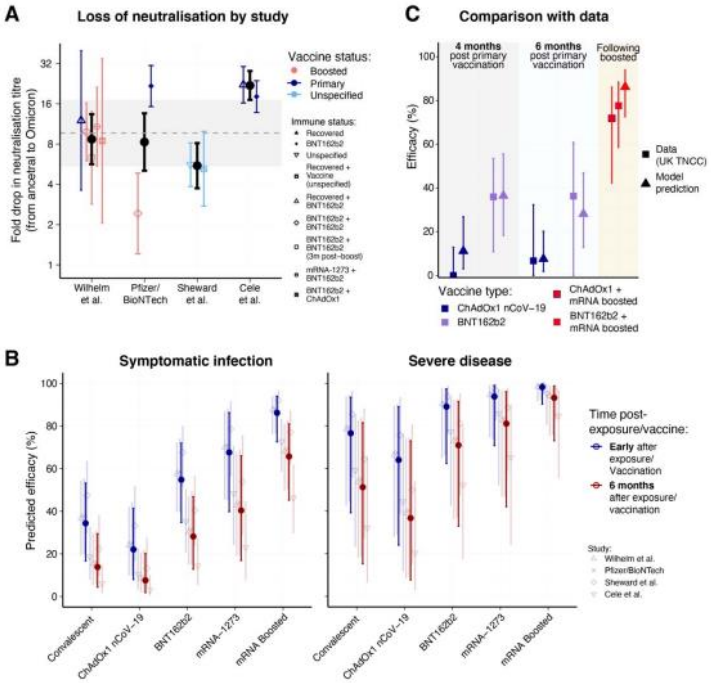
- Not-yet peer-reviewed data shows that the Omicron variant is showing exponential spread with a doubling time of 1.5 to 3.3 days (an estimated 2x faster than the doubling time of the Delta variant). Additional research from Public Health England has also found evidence of a doubling-time between 2 and 3 days and others as quickly as 1.5 days (CDC, WHO).



The chart to the left shows the proportion of SARS-CoV-2 infections by variant over time that are genetically sequenced globally. The red increase to the right of the chart shows the Omicron variant, currently representing 14% of the sequenced variants of SARS-CoV-2 worldwide (NextStrain/GISAID data).

- There is some evidence that the Omicron variant are two times as likely to give rise to a secondary infection within the Household (Public Health England)

- Initial, non peer-reviewed assessment of the genetic make-up of the Omicron virus suggests the variant may have arrived due to co-infection in an individual. Co-infections among those immunocompromised are of particular concern as it can not only lead to more severe disease but at greater risk for additional mutations the longer the virus remains active in the body.
- *Limited preliminary data* show vaccine efficacy appears to be reduced in preventing symptomatic infection from the Omicron variant of COVID-19 with preliminary studies suggesting reduction to 33% to 40% (depending on the vaccine) however, protection against severe disease remains high preliminary research estimating protection against severe disease remains at 70-80% for double-vaccinated (CDC; Meta-analysis pre-print, WHO, WHO situation report).
    - Preliminary research suggest booster shots can increase efficacy of vaccines against the Omicron variant for both symptomatic infection (up to 86%) and severe disease (over 98%), (Meta-analysis pre-print; Public Health England).
        - ***Graphic to the right**: Estimated fold drops in neutralisation titre against Omicron compared to the ancestral strain of SARSCoV-2 across studies and cohorts available as of 13th December 2021 (pre-print: A meta-analysis of Early Results to predict Vaccine efficacy against Omicron)*
    - Diagnostic accuracy & testing using most common methods (PRC or antigen-based rapid diagnostics) appear to remain effective for detecting the Omicron variant (WHO)
- Most therapeutic interventions for the treatment appear to be effective except for some preliminary evidence suggesting monoclonal antibodies have decreased neutralization against Omicron (WHO, Nature, pre-print)



- In an early study of the first few Omicron cases (43) followed in NY, United States, 58% were among patients 18-39 years of age, 14% of patients had previous SARS-CoV-2 infections, and 79% of the recorded infections (34 people) occurred in patients who had completed the primary series of COVID-19 vaccine, with 14 people having received the booster dose. Most significant symptom was cough, fatigue and congestion (compared to the primary symptoms described by WHO). Only one (vaccinated) patient of the 43 followed needed hospitalization (CDC MMWR).
- From an investigation into an outbreak starting at a Christmas party in Oslo where 80 of 111 attendees were diagnosed with COVID-19 (17 with the Omicron variant). The Norwegian Institute of Public Health reported the most common symptoms were cough, lethargy and sore throat, with over half reporting a fever (Eurosurveillance).
- ***Additional details on the Omicron variant updated through December 20th here***

Summary impacts of Variants of Concern designated by WHO (referenced from WHO Situation Report #70)

Name/ Label	Alpha	Beta	Gama	Delta *Now accounting for over 79% of sequenced SARS-CoV-2 variants*	Omicron *Now representing 14% of sequenced SARS-CoV-2 variants*
Transmissibility	Increased transmissibility	Increased transmissibility	Increased transmissibility	Increased transmissibility	Still under investigation
Disease Severity	Possible increased risk of hospitalization, possible increased risk of severity and mortality	Possible increased risk of hospitalization, possible increased risk of in-hospital mortality	Possible increased risk of hospitalization and/or risk of severe disease	Possible increased risk of hospitalization	Under investigation
Risk of reinfection	Neutralizing activity retained, risk of reinfection remains similar	Reduction in neutralizing activity reported; T cell response elicited by D614G virus remains effective	Moderate reduction in neutralizing activity reported	Reduction in neutralizing activity reported	Preliminary evidence suggests a possible increased risk of reinfection
Impact on Diagnostics	Limited impact – S gene target failure (SGTF), no impact on overall result from multiple target RT-PCR; No impact on Ag RDTs observed	No impact observed	No impact reported	No impact reported	PCR continues to detect Omicron. Impact on Ag-RDTs is under investigation.
Impact of vaccine efficacy (for those with WHO EUL)[1]	Protection retained against all outcomes	Protection maintained against severe disease, limited evidence for reduced efficacy against symptomatic disease (AstraZenica, Pfizer)	Unclear, limited evidence at this time	Protection retained against severe disease, limited evidence for possible reduced infection against symptomatic disease and infection	Under investigation, preliminary studies suggest reduced neutralization

[1] Resources and detailed list of vaccine efficacy studies can be found here: VIEW-hub (IVAC)

Practical Tools/ implications for COVID-19 preparedness & Response strategies

- Keeping in mind ethical considerations and while the number of protests due to restrictions has been on the rise, a modelling exercise published in the Lancet Public Health found that countries that required proof of vaccination, recent infection, or negative test for everyday activities such as entering restaurants or travel saw an increase in vaccine update 20 days before to 40 days after with the largest change seen in age groups below 49.
- In a public health trial for "test to stay" in United States LA public schools kindergarten – secondary school, found that allowing students to remain in school even if testing positive with everyone in the room wearing masks did not result in significant increases in reported COVID-19 infections during the study period. This strategy has the potential to reduce the number of days lost to schooling, however the study authors mention that participation was limited to schools with higher resources able to support and implement the masking policy and that access to vaccines during this trial remained very important (CDC MMWR).

Clinical Trials and Treatments

- Initial analysis released from Pfizer found that their antiviral treatment PAXLOVID treatment retained 89% efficacy in preventing hospitalization and deaths among high risk patients. The study while not yet peer reviewed also showed a significant reduction in viral load compared to placebo groups and has potential (research underway) to be effective against Omicron.

Surveillance

- A meta-analysis published in JAMA from China, found that over 40% of people with confirmed SARS-CoV-2 infections had asymptomatic COVID-19, and that asymptomatic COVID-19 patients were still susceptible to later developing symptoms related to long-covid. While the study only covered an estimated 0.25% of the infections in China, it included data from 95 different studies covering more than 29.7 million cases.

Implications for Public Health in the future

- A recent study of the COVID-19 response in the United States by Johns Hopkins School of Public Health Center for Health Security found that a more inclusive approach to engaging primary caregivers in the COVID-19 response and better integration of community-based organizations and primary care givers would have resulted in a better overall public health response and more needs to be done in the future to reach across the sectors and restore trust in public health responses.

References

Internal

IFRC Go COVID-19 response

- Dashboards and operational reports
- Monthly vaccine updates and highlights

IFRC Health Help Desk

- Webinars
- Operational Guidance related to the health response to COVID-19

External

ALNAP COVID-19 Response Portal

British Medical Journal Coronavirus Hub

Centers for Disease Control (CDC) Morbidity and Mortality Weekly Report (MMWR)- COVID-19 Reports

Johns Hopkins Center for Health Security

- Particularly the COVID-19 Updates (weekly)

Johns Hopkins Center for Communication Programs COVID-19 Behavior Dashboards

Journal for American Medical Association COVID-19 focus (JAMA)

Nature SARS-COV-2 Review

New England Journal of Medicine COVID-19 page (NEJM)

Nextstrain (genomic data tracking for mRNA viruses)

Our World in Data

Prevent Epidemics In-Depth Science Reviews

UNDP Vaccine Affordability

WHO COVID-19 Dashboards

WHO Epidemiological Situation Reports