

Covid-19 vaccination

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Virology education, December 2022

Covid-19 vaccines. Emergency Use Authorization

- Pfizer and Moderna mRNA vaccines (December 2020)
- Astra Zeneca (January 2021) and Serum Institute of India adenoviral vector vaccines
- SputnikV adenoviral vector vaccine (August 2020)
- Sinopharm inactivated virus vaccine (December 2020)
- Johnson and Johnson (February 2021)
- Novavax (February 2022)

- 11 Vaccines currently Granted Emergency Use Listing by WHO

Covid-19 vaccines

- Covid-19 vaccines are effective in protecting from severe disease and death at population level.
- Covid-19 vaccines have only limited capacity to prevent new infection and a very limited effect on viral transmission.
- In the current context (December 2022), duration of efficacy in individuals > 60 years of age is 4-5 months. Booster mRNA vaccines are effective to maintain protection from severe disease and death.

Unequal access to vaccines 2021

- *High-income countries have over 200% population coverage of vaccine doses, obtained mainly through bilateral deals with manufacturers to secure existing and future stocks. In the poorest countries, fewer than 1% of people have had a single dose of vaccine (IPPPR report, May 2021)*
- Vaccine nationalism.
- Early saturation of manufacturing capacity.
- The concentration of manufacturing capacity, of trials and knowledge generation for vaccines in only a small number of countries.
- Private sector control over intellectual property rights and industrial capabilities.

Independent Panel's May 2021 Recommendations for **immediate actions**

High income countries with a vaccine pipeline for adequate coverage should, alongside their scale up, **commit to provide** to low- and middle-income countries

- **at least one billion vaccine doses no later than 1 September 2021 and**
- **more than two billion doses by mid-2022**, to be made available through COVAX and other coordinated mechanisms.
- *By November 2022, 18 billion vaccine doses have been administered globally, of which 1,83 b (12%) have transited through Covax*

The World Trade Organization (WTO) and WHO should convene major vaccine-producing countries and manufacturers **to agree to voluntary licensing and technology transfer for COVID-19 vaccines.** *2022 WTO ministerial conference failed to reach agreement.*

The Independent Panel's recommendations for transforming the international system for pandemic preparedness and response

- **Elevate leadership to prepare for and respond to global health threats to the highest levels to ensure just, accountable and multisectoral action.**
- **Strengthen the independence, authority and financing of WHO**
- **Invest in preparedness now to prevent the next crisis**
- **Create a new agile and rapid surveillance information and alert system**
- **Establish a pre-negotiated platform for tools and supplies**
- **Raise new international financing for pandemic preparedness and response**

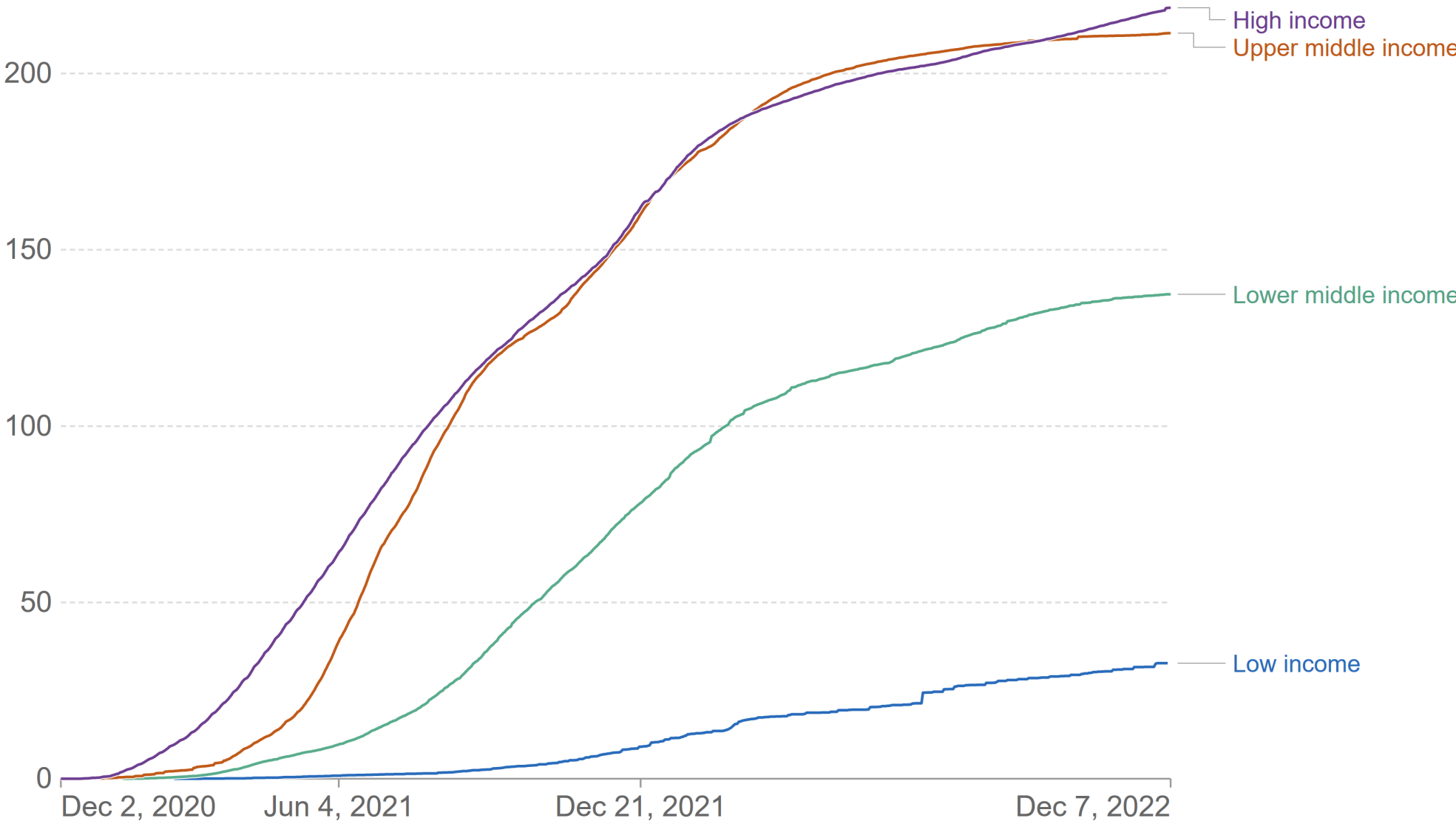
Unequal access to vaccines December 2022

- Almost two years after Covid-19 vaccines were introduced, over **85 %** of the population in high income countries have been **fully vaccinated** and - most of people have received boosters; 71 % of the world population has received at least one dose of a Covid vaccine; only **25 %** of people in low and lower middle income settings have received **at least one dose**.
- Inequities lead to prolonged outbreaks, preventable illness and deaths, economic loss, and social breakdowns.

COVID-19 vaccine doses administered per 100 people, by income group



All doses, including boosters, are counted individually.



Source: Official data collated by Our World in Data, World Bank
Note: Country income groups are based on the World Bank classification.

Covax

- COVAX was conceived as a procurement mechanism for the whole world, consisting of three arms: one to supply vaccines to wealthier countries, the so-called Self-financing Participants Facility; a Humanitarian Buffer to make vaccines available for people in emergencies; and one to supply vaccines to LMICs. The independent evaluation of ACT-A of October 2022 concluded that the first two did not work.
- By November 2022, 1.83 billion COVID-19 vaccine doses have been delivered through Covax to 146 countries. Shared vaccines from high income countries represented close to half of these amounts.

Unequal access to vaccines December 2022

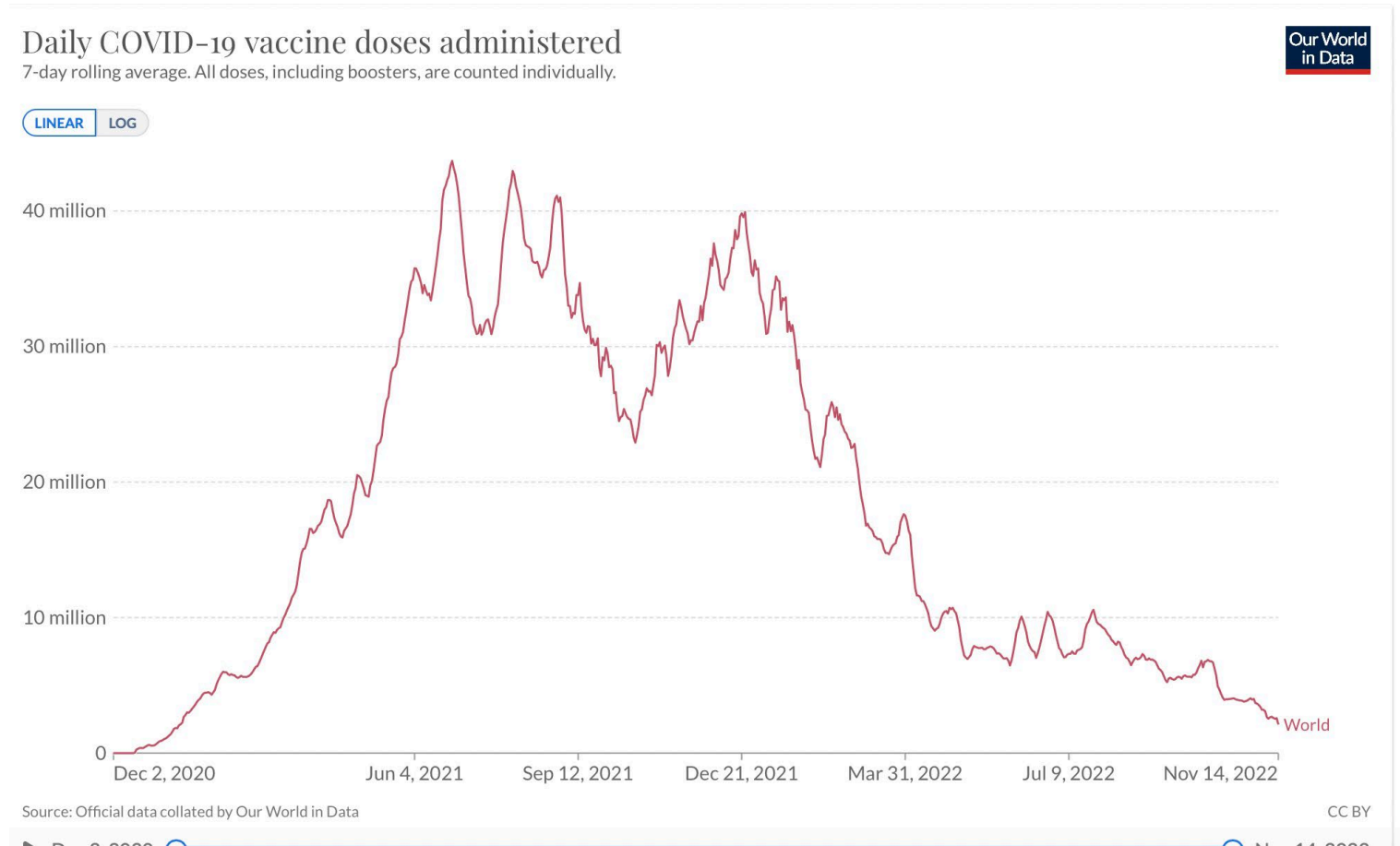
- Downstream challenges with supply chains and delivery systems at national level preventing « transforming vaccines into effective vaccination » of people at higher risk among the adult population in a number of LMICs.
- Vaccine hesitancy.

December 2022

- Decreased surveillance and viral sequencing across the globe; decreased testing; much decreased uptake of protective measures
- Decrease in the number of vaccines administered globally
- Covax program likely to focus on under-immunized settings; possibly shifting covid vaccines into routine vaccination programs

- Covid-19 hospitalizations increasing in the US and Europe, coinciding with severe outbreaks of influenza and RSV,
- Uncertainty about the future of the epidemic in China

Daily doses of Covid-19 vaccines administered globally



A pre-negotiated platform for tools and supplies

- Inadequacy of the current supply-driven model
- Inadequacy of the current “redistribution” model (Covax)
- The current market system has too many built-in limitations to effectively, rapidly stop epidemic-prone outbreaks.
- It prefers to invest in supplies that guarantee a return on investment. Small outbreaks, even those devastating to people locally can not do that, and nor can investing in stockpiles that may expire and need replenishment.
- For an end-to-end R&D system to effectively produce pandemic vaccines and treatments that are available to all, it must incorporate **pre-negotiated rules to deliberately govern the collaboration between public and private sectors.**

Establish a pre-negotiated platform for tools and supplies

- Technology transfer across all regions **has begun**, but more needs to happen, faster.
- WHO has sponsored the development of vaccine manufacturing hubs in South Africa, Argentina and Brazil to develop and produce mRNA vaccines.

Establish a pre-negotiated platform for tools and supplies

- Key technologies for diagnostics, treatments and vaccines to fight new pathogens would be made available as common goods for country and regional hubs to build upon. This already exists for seasonal influenza vaccines.
- Regional R&D hubs
- Regional rapid to scale manufacturing capacity
- Clinical trials platforms
- Financing and governance
- Governance for equitable supply

Establish a pre-negotiated platform for tools and supplies

- *It is as yet unclear whether new approaches to R&D for pandemic health technologies will be negotiated within the frame of the new pandemic treaty and that of the political declaration of the UNGA special session of 2023*



An outbreak
must never become a
pandemic again

