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Global COVID-19 vaccine inequity

On May 27, the Strategic Advisory Group of Experts on Immunization met virtually to discuss global COVID-19 vaccine distribution and inequity. Talha Burki reports.

On May 27, 2021, the WHO Strategic Advisory Group of Experts on Immunization (SAGE) convened to discuss COVID-19 vaccines. 15 vaccines are currently in use (the Oxford-AstraZeneca and Pfizer-BioNTech products are the most widely used), and 1.9 billion doses had been administered by June 7, 2021. "Inequity is decreasing, but high-income countries have administered 69 times more doses per inhabitant than low-income countries", stated SAGE.

The meeting heard from the manufacturers of the Pfizer-BioNTech vaccine, who confirmed that they would be able to produce a new variant vaccine within 100 days, and from the COVID-19 Vaccines Global Access (COVAX) Facility, which has shipped more than 80 million doses of COVID-19 vaccines but is now facing severe supply restrictions. COVAX has issued a statement pointing out that by the end of June it will have a shortfall of 190 million doses. The Serum Institute of India, which is licensed to produce the Oxford-AstraZeneca vaccine and had supplied the COVAX Facility, has suspended exports of the vaccine in order to combat the huge surge in domestic cases of COVID-19. The Serum Institute of India hopes to resume exports by the end of the year. Much will depend on the pace of vaccination within India.

"If we do not address the current, urgent shortfall, the consequences could be catastrophic", asserted COVAX. There are particular concerns for Africa. On June 3, WHO warned that vaccine shipments to the continent had ground to a near halt. Several countries, including Angola, Namibia, and Uganda, are seeing sharp rises in cases of COVID-19.

Vaccine supplies are running low. WHO noted that 31.4 million doses have been administered in 50 African nations, which equates to a mere 2% of the population receiving a single dose. Yet in the UK alone, more than 40 million people—over 70% of the adult population—have received at least one dose of a COVID-19 vaccine. Globally, the average is 24%.

COVAX highlighted an analysis by the Bill and Melinda Gates Foundation that concluded that high-income countries could share 1 billion doses of COVID-19 vaccines and still have enough product left over to vaccinate 80% of their population older than 12 years. Thus far, the USA and Europe have collectively pledged to donate 180 million vaccine doses.

"We are seeing strong signs that countries are going to release more and more doses", Margaret Harris (WHO, Geneva, Switzerland) told *The Lancet Infectious Diseases*. "There is an understanding that it is the right thing to do, even from a practical perspective, so as to minimise the risk of the variants." She stressed the importance of acting quickly. "If we can get to the stage where countries have vaccinated their priority groups then we will be in a much better place", said Harris. For this to happen, at least 1.3 billion doses of vaccine are needed for the 92 low-income economies participating in COVAX.

WHO and Médecins Sans Frontières were among those to welcome the May, 2021, announcement by the US Government that it backed waiving intellectual property protections for COVID-19 vaccines. Such a waiver is subject to negotiations at the World Trade Organization. But although more than 100 countries are in support,

there are powerful opponents, including the EU, Japan, and the UK. Still, the announcement by the USA makes it far likelier that some kind of waiver will be introduced. Proponents argue that there is unused capacity in countries such as Bangladesh, Canada, and Israel that could easily be turned to vaccine production. Those opposed counter that a waiver would discourage future innovation without doing much to solve the pressing problem of supply—after all, the pharmaceutical industry already has every incentive to produce as much vaccine as it can.

Prashant Yadav (Center for Global Development, Washington, DC, USA) points out that the earliest a waiver could come into force would be around October, 2021. Countries with spare capacity would then require several months to set up production, during which time the co-operation of the developing company would be vital. "A waiver could potentially help increase supply, but not this year", explained Yadav. "We could not realistically expect the first commercial batches that would result from the waiver to be available until the summer of 2022."

Yadav believes that the quickest way to achieve greater output would be voluntary licensing, such as the arrangement between AstraZeneca and Serum Institute of India. If manufacturers cannot spare the staff to help set up new sites, perhaps external organisations could step in. "We should be thinking about making it as easy as possible to establish secondary manufacturing sites and help companies navigate the complexities of commercial partnerships", Yadav told *The Lancet Infectious Diseases*. "So if we can recruit and pay manufacturing experts from outside

the companies, to take care of the work on a contract basis, that would leave internal management free to concentrate on fulfilling the contracts they have already signed."

According to the International Monetary Fund, 6 billion doses of vaccine will probably be produced this year. AstraZeneca is running at around 150 million units a month—less than it had anticipated but still a hefty amount. It is hard to know how much vaccine is being manufactured in China, but Yadav reckons that 300 million units a month would be a reasonable estimate. SAGE has now issued interim recommendations on the Sinopharm and Sinovac products. Both vaccines are highly effective against severe disease.

In the clinical pipeline lie around 100 vaccine candidates. "We are in a position to start getting specific about the characteristics we would

like the next set of vaccines to have", said Olivier Wouters (London School of Economics and Political Science, London, UK). "A nasal vaccine or something orally administered, ideally given in a single dose, would be tremendously useful; we should be encouraging developers to focus their attention in those sorts of directions." The vast majority of candidates currently in clinical development do not fulfil these conditions.

"We need a signal to developers, from those who pay for the vaccines, that we are looking for products which radically improve on what we already have", argues Yadav. This could be in terms of properties—for example, a viral vector vaccine with similar efficacy to the mRNA vaccines—or related to the ease of delivery, such as a vaccine with greater thermostability or a product that does not require a syringe. Or it could be down

to the target—perhaps SARS-CoV-2 has vulnerabilities aside from the spike protein. "We are doing very little to incentivise a diverse range of products", said Yadav. "It is time we started doing so."

In the short-term, there is the sizeable problem of increasing the availability of the vaccines that are already in production. Ten countries account for 77% of the globally administered doses. The market has been cornered by rich nations. The EU, the UK, and the USA have all purchased far more vaccine than they can possibly use. "There is a lake of vaccine out there, and COVAX is receiving drops", said Harris. If low-income and middle-income countries are not to be left behind, high-income countries will have to open the floodgates.

Talha Burki

Infectious disease surveillance update

Rabies in Argentina

On May 30, the Ministry of Health Buenos Aires, Argentina, reported the first confirmed case of human rabies since 2008. The case was in a 33-year-old woman from Coronel Suarez who presented at a health facility on April 18 with symptoms of nervous systems weakness, including upper limb weakness and altered sensation. These symptoms evolved to a reduction in consciousness, which developed to a coma and then death. Investigations revealed that the patient had been bitten by a dog in March and had not sought medical care at the time. Before this case, rabies had only been identified in bats in several provinces.

Anthrax in Russia

A confirmed case of anthrax was reported on June 3, in Tuva, Barun-Khemchik kozhuun district,

Russia. The case was in a 29-year-old man from Bizhiktig-Khaya village whose infection occurred during the slaughter of cattle. The patient presented with symptoms including the classic sign of black necrotic ulcers on the skin, fever, and lymph node soreness. In response, restrictive measures have been implemented in the village, including a lockdown of movement to and from the village. Response activities also include active case finding, prophylaxis treatment for residents, and vaccination of both residents and livestock.

Typhoid fever in Philippines

68 cases of typhoid fever have been reported in Calabarzon region, Philippines, between Jan 1 and May 19, 2021. Most cases have been reported from Laguna (n=30), followed by Cavite (n=26), Rizal (n=6), and Batangas (n=1).

The *Salmonella* Typhi bacteria, transmitted by the faecal-oral route or contaminated food or water, causes typhoid fever.

Measles in Nigeria

On June 3, Borno State Ministry of Health in Nigeria reported 600 suspected cases of measles, including six deaths, during epidemiological week 20. The six deaths were all reported from Maiduguri lower government area, which also reported the most number of cases during the outbreak. A total of 6253 cases have been reported, including 78 cumulative deaths, since January, 2021. 84 cases have been laboratory confirmed as IgM positive for measles and 84% (n=5226) of cases were in children younger than 5 years. A reactive vaccination campaign began in week 16.

Ruth Zwizwai



For more on **rabies in Argentina** see <http://outbreaknewstoday.com/argentina-reports-1st-human-rabies-case-since-2008/>

For more on **anthrax in Russia** see <http://outbreaknewstoday.com/anthrax-case-confirmed-in-tuva-russia-86931/>

For more on **typhoid fever in Philippines** see <https://promedmail.org/promed-post/?id=8421732>

For more on **measles in Nigeria** see <https://reliefweb.int/report/nigeria/borno-state-measles-outbreak-weekly-situation-report-epi-week-20-18-24-may-2021>