BIZCOMMUNITY

Why a campaign to champion all vaccines matters now more than ever

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5 May 2020

World Immunisation Week is celebrated in the last week of April every year. The aim is to recognise efforts to develop new vaccines and increase vaccination coverage worldwide. The World Health Organisation (WHO) also uses the week to galvanise national and international communities to keep pushing for more: greater demand for vaccines, better access, equity and higher coverage.

Vaccines are some of the most equitable and cost-effective health interventions available. ranplett/GettyImages

Vaccines are some of the most equitable and cost-effective health interventions available. As global attention is captured by the Covid-19 pandemic, the campaign to champion all vaccines matters now more than ever.

Lives saved due to immunisation

The world before vaccination was a very different place. On the African continent, before a yellow fever vaccine was developed and routinely delivered (as recommended by the WHO in 1988), epidemics occurred every three to 10 years. Up to a quarter of those showing symptoms would get severe disease and among those with severe disease, half would die. Outbreaks still occur in at-risk areas where vaccination services have broken down. But if the vaccine is available, 99% of people who get it are protected within 30 days of the injection and will survive.

Similarly with measles, between 2000 and 2018 the vaccination is estimated to have prevented 23 million deaths worldwide. In the 1960s, before widespread vaccination, measles epidemics used to occur every two or three years, not only causing millions of deaths, usually in children, but also long-term disabilities. Measles can attack every organ in the body, and even after recovering from the illness, children can be left blind or deaf, with detrimental effects on their immune systems.

There have been substantial gains in measles prevention. But there were still 140,000 measles deaths worldwide in 2018 due to pockets of unvaccinated children transmitting the disease. In the African region alone, the WHO estimates there were 1.7 million cases of illness and 50,000 deaths in 2018.

While calling for a Covid-19 vaccine we must remember to ensure that the highly effective vaccines in our existing armoury, like the one for measles, continue to be made available for all who need them. Covid-19 provides a stark reminder

of what a world without vaccines would look like.

Limitations

If vaccines are so effective, why don't we have them for all diseases?

HIV and malaria are "hard hitters" on the African continent and have been for decades, so why are there still no vaccines available?

A large part of the challenge boils down to how rapidly these germs can change their identity. Vaccines aim to simulate a natural infection, so that when a true infection comes along, your body can recognise the germ quickly and launch the correct response to disarm it. They are, in that way, one of the most "natural" medical interventions you could think of. Essentially they just prepare your own immune system to react more effectively than it would if coming into contact with the germ for the very first time.

The route to developing an effective vaccine, therefore, depends on the nature of the germ itself, how your natural immune system responds to it and the safety of different possible types of vaccine material. Unfortunately, both malaria and HIV are highly complex organisms that can rapidly change the way they "look" to your immune system. This makes it hard to make a vaccine, as the organism itself is constantly changing and has inbuilt ways to evade recognition by your immune system

The safety of potential vaccines is also crucial. Research moves sequentially from "test-tubes" to animals and, if it meets all the criteria indicating that it is safe, then the trials move to include a small number of healthy adults. Gradually, the number and diversity of those included in trials is expanded, until enough safety and efficacy data are accrued to pass it through to the next stage of development.

There is a huge amount of ongoing research to identify possible "candidate" vaccines for both HIV and malaria (and Covid-19). A few malaria vaccine candidates have looked promising and there is a large scale implementation trial of the RTSS malaria vaccine to demonstrate effectiveness; researchers are optimistic. Despite testing a large number of HIV vaccine candidates in the past few decades, they have failed to demonstrate efficacy, and the search continues.

But the frustration from decades of failed attempts should not reduce the rigour of the research needed. The vaccine development process has to be long enough to ensure the end product is safe. Continued focus on developing new vaccines is needed, alongside patience and political will to get them to the populations that need them most when they do become available.

Remaining challenges: access and attitudes

"Getting vaccines to the populations that need them most" encompasses a range of problems. The WHO estimates that in 2018, 20 million children remained unvaccinated or under-vaccinated. That is, they had not completed the full course of recommended vaccinations by the time they reached one year of age. That is one in every seven infants worldwide.

This statistic hides considerable complexity. The number varies by vaccine, across countries and within countries.

Leaving a proportion of the population under-vaccinated doesn't just affect those individuals, it reduces herd protection. Herd protection is the effect achieved by vaccinating most people in the "herd" and therefore reducing transmission of the infection to such an extent that the remainder don't come into contact with it. This protects vulnerable people who cannot be vaccinated because they are too young or have certain health conditions.

Pockets of under-vaccinated people put themselves and others at risk as they act as reservoirs for transmission of the infection.

Vaccine hesitancy or "anti-vax" sentiment has become a growing issue, to the extent that the WHO considered it one of the top 10 threats to global health in 2019. It is still relatively rare in Africa, but it has arisen recently in populations more sceptical of health authorities and for whom the memories of uncontrolled infection have disappeared.

It must be guarded against, especially in the uncertain times of Covid-19. A global pandemic like this one threatens to reverse the victories that are won every day over vaccine-preventable diseases in low-income settings, including gains towards polio eradication.

The pandemic reduces the staff and resources available to continue routine immunisation services as resources are redirected to COVID-19 wards. Uncertainty over whether services are continuing as many workplaces are temporarily shut down, together with reduced transport options, makes it harder for parents to access care.

Fear of contracting the virus in transit or while at the health facility may additionally prevent parents from bringing children to the health centre. If the uptake of vaccines does drop, outbreaks of vaccine preventable diseases such as bacterial meningitis and pneumonia, measles, rotavirus diarrhoea and others will cause even higher rates of death when patients present to a health system that is already straining under the weight of Covid.

Now more than ever, routine vaccination must continue. The WHO has released guidelines on maintaining routine immunisation services during the Covid-19 pandemic. While everyone has their eyes on the coronavirus pandemic, it is vitally important that national immunisation programmes, front line health workers and parents find a way to sustain the routine immunisation system and continue to save millions of children's lives.

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