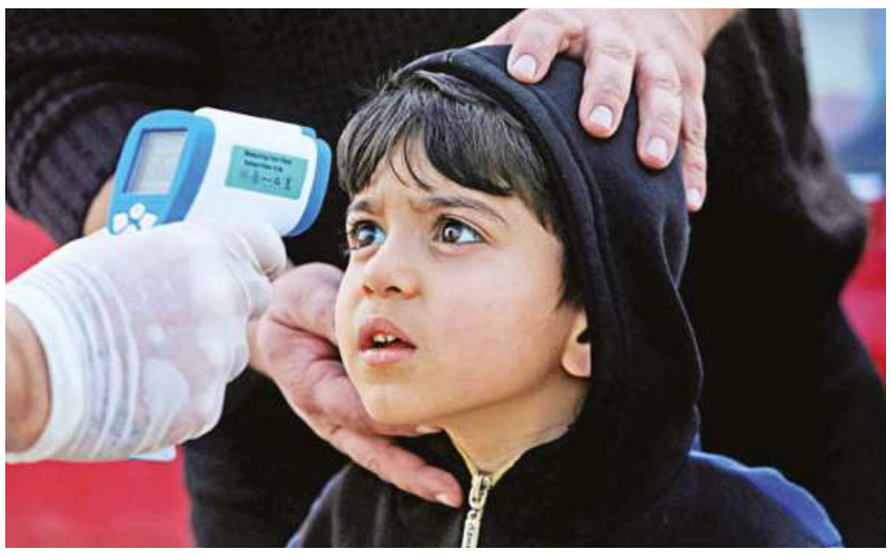
Vaccinating children against COVID-19

Dr Abdullahel Amaan &
Dr Khainoor Zahan



The world is in the midst of the COVID-19 pandemic which has spread rapidly across the world. The pandemic is already having a serious impact especially on global and national economies, health and education systems, and ultimately on the fulfilment of children's rights. Governments all over the world have implemented several measures to contain the spread of COVID-19, ranging from social distancing, behavioural changes to home quarantine, school closures, business closures and community lockdown, all of which have had secondary impacts on about 1.5 billion children and their households.

Vaccination is a success story of global health and development, saving millions of lives every year, in each of the corners of the world. Vaccines reduce the risks of getting a disease by working with our body's natural defences to build protection. If the body is exposed to the disease-causing germs later, the body is immediately ready to destroy them and prevents illness. It is a key component of primary health care and an indisputable human right. It is also one of the best health sector investments.

The COVID-19 vaccine contains material from the causative virus that gives our cells instructions for how to make a harmless protein that is unique to the virus. The vaccine will help our body to develop immunity to the virus that causes COVID-19.

Vaccination can liberate us to return to school or work, celebrate holidays, eat in restaurants, travel, go on a vacation and run all sorts of economic activities. We look to vaccines to give us back our world; children back in their classrooms, on soccer fields, and at birthday parties which are essential elements of the normal world and we need to help children to get there. We must have to minimise our children's risk, maximise their chances of returning to school, and mitigate the pandemic's effects on their families.

Globally, about 26% of the population is under 15 years of age thus an effective herd immunity will certainly require the coverage of paediatric vaccination. Vaccinating children is likely to have benefits both direct (protecting children against COVID-19 and its associated grave effect -multisystem inflammatory syndrome in children [MIS-C]) and indirect (protecting others by reducing the spread). So we need to think creatively and empathically about what motivates parents to accept vaccination for their offsprings.

The data from the paediatric-focused studies and post-licensure monitoring for potential rare outcomes such as vaccine-associated MIS-C are a bare minimum, as is ensuring just and equitable access to vaccination. A societal decision-making regarding vaccinating the children and assurance from the government regarding widespread access to testing, and institutional support for parents, teachers, and other caregivers would help protect families in this stressful period.

The Expanded Programme on Immunisation (EPI) is one of the most successful public health interventions in Bangladesh. The ever-successful EPI vaccination campaigns may offer relevant insights about parents' decisions regarding vaccinating their children; about building societal trust, access, and equity; and about how to mitigate the targeted disinformation regarding the safe and effective vaccine.

Today planning for the implementation of COVID-19 vaccination requires not only working out details of its distribution and cold chains but also strategies for reaching distrustful, hesitant, dubious people and convincing them to get ready to vaccinate their children whenever it will be available for them.

Protecting children against COVID-19 infection is both an ethical obligation and a practical necessity. We need to disseminate the data from paediatric trials to reassure parents about the safety and efficacy of this approach. The physicians' community has already been trying to build a social motivation for vaccination through social media. Other trusted messengers of our society may help to encourage the mass population in this regard and help to bring the lovely days back in our lives.

Dr Abdullahel Amaan is a Resident at the Department of Neonatology, Bangabandhu Sheikh Mujib Medical University, Bangladesh. Email: abdullahelamaan@gmail.com

Dr Khainoor Zahan is a Deputy Director at the Bangladesh National Nutrition Council (BNNC), Bangladesh. Email: khainoorzahan@gmail.com

NEW DIAGNOSTIC

Learning from prostate cancer-detecting dogs to improve diagnostic tests

New research demonstrates the ability of dogs to detect aggressive prostate cancer from urine samples and suggests that an artificial neural network could learn from this olfactory ability, with an eye toward replicating it in novel detection tools. Claire Guest of Medical Detection Dogs in Milton Keynes, U.K., and colleagues presented these findings in the open-access journal PLOS ONE.

The widely used prostate specific antigen (PSA) screening test can miss aggressive prostate cancer in men who have it or indicate that a cancer is aggressive when it really poses little risk. Alternative tests are being explored, and research has also shown that dogs can be trained to detect prostate cancer from urine samples with a high degree of accuracy. However, dogs would be impractical for large-scale screening.

The researchers trained two dogs to detect aggressive prostate cancer from urine samples. These dogs showed 71% sensitivity (ability to identify truly positive cases) and 70% to 76% specificity (ability to correctly identify negative cases) in detecting prostate cancer with a Gleason score of 9, indicating highly aggressive disease.

The team also applied two laboratory detection methods to the urine samples: Gas chromatography-mass spectroscopy analysis of volatile compounds and analysis of microbial species found naturally in urine. Both methods surfaced key differences between cancer-positive and cancer-negative samples.

Finally, the researchers used the dogs' data to train an artificial neural network to identify specific portions of the spectroscopy data that contributed significantly to the dogs' diagnoses. This also revealed specific differences between positive and negative samples.

HEALTH *bulletin*

Semaglutide plus lifestyle change shown effective for obesity

Injectable semaglutide, approved to treat type 2 diabetes, is efficacious as an adjunct to diet and exercise for weight loss in nondiabetic overweight or obese adults, according to an industry-conducted trial published in the New England Journal of Medicine.

Researchers randomised nearly 2,000 participants without diabetes who were either overweight with at least one weight-related comorbidity or obese to receive 2.4 mg subcutaneous semaglutide or placebo weekly for 68 weeks. All participants received counselling to reduce calorie intake and increase physical activity.

Mean weight loss was significantly greater with semaglutide than placebo (15% vs. 2%), as was the percentage of patients losing) 5% of body weight (86% vs. 32%). Semaglutide users had a higher rate of adverse gastrointestinal effects, most mild. Cholelithiasis was also more common in the treatment group (1.8% vs. 0.6%). No difference in hypoglycemia was noted.

Editorialists say that the trial results are promising, but they note several limitations, including that only 6% of trial participants were Black, and 12% were Latinx, which is not reflective of the global population.

COVID-19 vaccination potential will not be achieved without increased production, affordable pricing, global availability, and successful rollout

Star Health Report

Having new COVID-19 vaccines will mean little if people around the world are unable to get vaccinated in a timely manner. Vaccines have to be affordable and available to all countries, and governments must have the administrative and political capacities to deliver them locally to ensure an effective global immunisation strategy against COVID-19, say the authors of a Health Policy piece published in The Lancet.

Global distribution of safe vaccines is imperative for spurring economic recovery, protecting lives, achieving herd immunity, and minimising the risk of new variants emerging against which existing vaccines are less effective.

Dr Olivier Wouters, lead author from the London School of Economics and Political Science, UK, says: "Several manufacturers have successfully developed COVID-19 vaccines in under 12 months, an extraordinary achievement. But the stark reality is that the world now needs more doses of COVID-19 vaccines than any other vaccine in history to immunise enough people to achieve global vaccine immunity. Unless vaccines are distributed more equitably, it could be years before the coronavirus is brought under control at a global level. The questions now are when these vaccines will become available, and at what price."

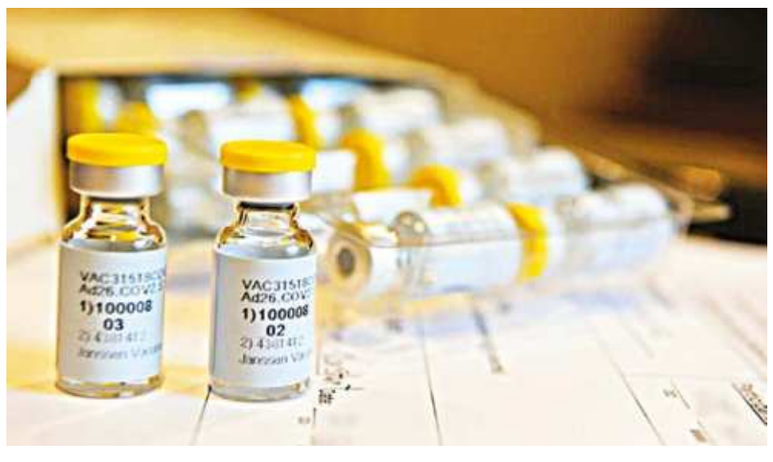
Scaling up vaccine production to meet global demand is a monumental challenge. Most countries still lack the domestic capacity to rapidly produce COVID-19 vaccines on their own, and the sheer number of vaccines that are needed places huge pressure on global supply chains for materials like glass vials and syringes.

Scarce supply, coupled with advanced orders by the world's richest nations for billions of vaccine doses—enough to protect some populations several times over—creates challenges to achieving timely, universal access. COVAX (the global initiative to ensure access to COVID-19 vaccines for all countries) was set up to avoid this, but vaccine nationalism could leave COVAX with limited supplies.

Affordability also remains a major concern, with some vaccine manufacturers setting prices for COVID-19 vaccines that are among the highest ever charged for a vaccine. Without price controls, low-income countries are unlikely to be able to afford or access enough vaccines to protect their populations—with the lowest prices developers have offered to any country or purchasing bloc ranging from US$5 to US$62 per course.

Many Low- and Middle-income Countries (LMICs) also face substantial logistical and administrative barriers to delivering vaccination programmes, including infrastructure, vaccination registries, and cold storage. For instance, while many multi-dose, ultra-cold storage vaccines are highly efficacious, resource-constrained countries might be better to use single-dose vaccines which only have to be kept refrigerated, and are in late stages of clinical development.

To overcome challenges in vaccine hesitancy and ensure that vaccines are administered to as many people as possible, governments need to do much better at building public trust in the safety of vaccines and to combat misinformation and rumours around COVID-19.



Vision loss could be treated in one billion people worldwide

Addressing avoidable vision loss with existing, highly cost-effective treatments, and improving inclusion of people living with permanent vision loss in society, offers enormous potential to improve the economic outlook of individuals and nations, and to contribute to a healthier, safer, more equitable world, according to a new Commission report on Global Eye Health published in The Lancet Global Health journal.

Without additional investment in global eye health, new estimates reveal that 1.8 billion people are expected to be living with untreated vision loss by 2050. The vast majority of these (90%) reside in low- and middle-income countries (LMICs), with the greatest proportion occurring in Asia and sub-Saharan Africa.

"It is unacceptable that more than a billion people worldwide are needlessly living with treatable vision impairment", says Professor Matthew Burton, co-Chair of the Commission and Director of the International Centre for Eye Health at The London School of Hygiene & Tropical Medicine, UK. "Vision impairment leads to detrimental effects for health, wellbeing, and economic development including reduced education and employment opportunities, social isolation, and shorter life expectancy. As the COVID-19 pandemic brings renewed emphasis on building resilient and responsive health systems, eye health must take its rightful place within the mainstream health agenda and global development."

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