

COVID-19 vaccine deployment: is Bangladesh ready yet?

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Some countries have started COVID-19 vaccine roll out in the past few weeks and most people are wondering when the long-cherished first vaccine shipment will arrive in Bangladesh. As the policymakers continue their attempt to get vaccines from various sources, one critical question still needs to be paid the highest attention, "Is Bangladesh preparing well to roll out the vaccine once it becomes available to the nation?"

The government of Bangladesh has drafted a national deployment and vaccination plan to vaccinate 80% of the population in four stages. Unfortunately, as the crisis caused by COVID-19 is unlike any other crisis seen in the past, the country lacks infrastructure, logistics, resources and experience to accomplish this mammoth task. Population-wide vaccination requires the implementation of several factors, including but not limited to: increase capacity of the existing cold chain, recruit and train vaccinators, establish strong leadership, ensure proper coordination, launch awareness campaigns to address vaccine hesitancy.

Proper management of the cold chain is vital to maintain the required temperature in which the vaccine shall remain potent.



Therefore, it is critical to increase the capacity of the existing cold chain as a huge part of the country's cold chain is occupied with the Measles-Rubella vaccine. Necessary measures should be taken to build new storage facilities, purchase equipment and logistics, confirm constant power supply in the storage and distribution sites, supply adequate storage vehicles and ensure careful handling as well as disposal of vials. Bangladesh can not just simply wait until the arrival of the vaccine to establish the cold chain capacity, as preservation at the right temperature is essential to maintain the quality and efficacy of the vaccine.

Limited success to ensure adequate tests and contact tracing, failure in the timely implementation of antigen testing, chaos observed during the distribution of PPEs make us nervous about the effective implementation of the vaccine deployment plan. Strong leadership is required to ensure that previously observed incoordination and miscommunication among different departments in the country do not hinder the successful implementation of vaccine deployment policy.

A high-profile implementation committee, led by a high-official from the Prime Minister's Office, should be formed to facilitate the

effective implementation of the vaccine policy. The strict handling of the distribution process can prove to be successful in deploying the vaccine policy.

A monitoring cell should be formed to oversee if the vaccine is transported and stored at the right temperature. Designing an integrated and electronic national vaccination tracking and monitoring database, with minimal data input burden for frontline workers, would be invaluable for the strategic implementation process of the national COVID-19 vaccine deployment.

Bangladesh has taken the commendable step to sign a Memorandum of Understanding

with Serum Institute of India (SII) to get 30 million doses of the University of Oxford/AstraZeneca vaccine. In addition, Bangladesh is expecting to get 68 million doses in 2021 from the GAVI Alliance (formerly Global Alliance for Vaccines and Immunisation) under the COVAX (The COVID-19 Vaccines Global Access Facility) facility. But Bangladesh must go for more vigorous vaccine diplomacy to get vaccines outside the COVAX facility, as the vaccines promised by SII and GAVI may not be sufficient to execute nationwide vaccination.

Vaccination awareness campaigns should be arranged to overcome vaccine hesitancy, counter misinformation, inform people about vaccine availability and preparedness, raise second dose awareness and justify the vaccination priority groups. Cognizance about personal protection and social distancing should be reinforced, as not all people would be covered in the initial stages of vaccination.

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UPDATE

Multiple mosquito blood meals accelerate malaria transmission

Multiple bouts of blood feeding by mosquitoes shorten the incubation period for malaria parasites and increase malaria transmission potential, according to a study published recently in the open-access journal PLOS Pathogens. Given that mosquitoes feed on blood multiple times in natural settings, the results suggest that malaria elimination may be substantially more challenging than suggested by previous experiments, which typically involve a single blood meal.

Malaria remains a devastating disease for tropical and subtropical regions, accounting for an estimated 405,000 deaths and 228 million cases in 2018.

In natural settings, the female *Anopheles gambiae* mosquito – the major malaria vector – feeds on blood multiple times in her lifespan. Such complex behaviour is regularly overlooked when mosquitoes are experimentally infected with malaria parasites, limiting our ability to accurately describe potential effects on transmission.

The results show that an additional blood feed three days after infection with *P. falciparum* accelerates the growth of the malaria parasite, thereby shortening the incubation period required before transmission to humans can occur. Incorporating these data into a mathematical model across sub-Saharan Africa reveals that malaria transmission potential is likely higher than previously thought, making disease elimination more difficult.

In addition, parasite growth is accelerated in genetically modified mosquitoes with reduced reproductive capacity, suggesting that control strategies using this approach, to suppress *Anopheles* populations, may inadvertently favour malaria transmission.

The findings have important implications for accurately understanding malaria transmission potential and estimating the true impact of current and future mosquito control measures.

HEALTH bulletin



Vitamin D supplementation does not prevent falls in older adults

The effect of vitamin D supplementation on fall risk in older adults has been uncertain, but in the recently published VITAL trial, which involved 26,000 participants, 2000 IU daily of vitamin D3 did not prevent falls. This randomised trial involved a two-stage design to determine the effect of three different doses of vitamin D on fall risk.

In the first stage, participants were assigned to take 1000, 2000, or 4000 IU/day of vitamin D3 or to a control group who received 200 IU/day. When prespecified interim analyses showed higher rates of falls and adverse events in the two highest-dose groups, those participants were reassigned to 1000 IU/day, and subsequent enrollees received either 1000 IU or 200 IU.

In the second stage, the 1000 IU/day group was compared with the control group. During 2 years of follow-up, there was no difference in the primary outcome (i.e., time to first fall or death).

In this study, vitamin D supplementation at doses of 1000 IU daily or higher did not prevent falls, and fall risk increased with higher doses. These outcomes, along with those of other recent studies, convincingly show that vitamin D supplementation does not prevent falls and might cause harm in community-dwelling older adults.

Eradicate lead to have a prosperous generation

DR MAHFUZAR RAHMAN

Today, as we all are confronting serious health risks from environmental pollution and hazardous materials, children are not exempted. Over 40% of the global burden of disease attributed to environmental factors falls on children under five years of age. Around 800 million children globally (1 in 3 children) have blood lead levels at or above 5 micrograms per deciliter (µg/dL), a level that requires action.

More than half of children in Bangladesh (35.5 million out of 64 million) are affected with blood lead levels above 5 µg/dL, making it the fourth most-seriously hit country in the world. Many more are exposed even when they are in the womb. These uncertainties of exposure in early life pose an unknown health risk which may have lifelong implications in their future life. To ensure long-term economic and social development in the country, immediate action is critical to allow children living and thriving with good health and full potential.

To develop a comprehensive childhood lead poisoning prevention programme in a community (which is already known to be affected by lead poisoning), the identification of exposure sources is crucial. Lead contamination often occurs by industrial sources (manufacturing and recycling of lead acid battery, jewelry making and gold waste processing, pesticides, coal mining, shipbreaking) or products containing source (turmeric,

aluminum cookware, paints, cosmetics, vermilion powder, amulets and jewelry). Inhalation of polluted air is another possible route of exposure. Airborne lead particulates emitted from industrial and residential sources or dust can enter the respiratory system, deposit into the lung, and absorb into the bloodstream. Local emission sources of lead may contribute to the elevated blood lead concentrations observed in the children.

Exposure to lead may cause cognitive delays, reduced IQ level, mental slowing and poor memory. Scientific evidence shows chronic lead exposure has been correlated with decreased intellectual ability and decreased growth among children. Protecting foetuses, infants and young children from any environmental health hazards and risks need to be on agenda for activist groups and organisations for child health and rights and most importantly for the government.

Public awareness raising initiatives need to be well designed, planned and implemented. Media campaigns through electronic and print media, public, private and social media could have an enormous positive impact to change the norms and practices within families, communities and society.

The government can offer healthy and safe living for the whole nation, including children, by enforcing existing policies for reducing exposure to environmental hazards and risks. Responses and actions against this emerging public health issue in Bangladesh must be well-coordinated between public and private sector key role players and need to be addressed through an integrated, comprehensive approach to mitigate the sufferings of the lead affected child population and future generation.

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Health benefits of peppermint

Peppermint is a cross between two types of mints: water mint and spearmint. The taste and smell you know from things like candies and soaps come from the concentrated oil inside the plant. Ancient Greeks, Romans, and Egyptians used mints, including peppermint, as medicine thousands of years ago. Here are a few of the numerous health benefits of peppermint.

Help with headaches: The active ingredient in peppermint is menthol. Some small studies show it can lessen the pain of migraine headaches. It may also reduce other symptoms like light sensitivity, nausea, and vomiting.

Kill mouth germs: Not only does the flavour of peppermint freshen your breath, but its antibacterial properties may also help get rid of the source of the smell: germs. It is believed to keep bacteria from forming a film on your teeth, which helps keep your pearly whites healthy.

Ease stuffy sinuses: Peppermint's antimicrobial powers may help you fight off the common cold or the infected mucus that sets up shop in your sinuses as a result. The menthol can also make you feel that you can breathe more easily.

Relieve menstrual cramps: It does not seem to affect the amount of blood loss, but the menthol in peppermint can ease the intensity and shorten the length of period pain in some women.

Calm seasonal allergies: Peppermint can help you enjoy the outdoors more when it is allergy season. It has a compound called rosmarinic acid that can lower your body's histamine reaction. This may mean fewer symptoms like an irritated, stuffy nose, sneezing, and red, itchy eyes.

Source: WebMD

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