

Editorial

COVID-19 Vaccine & Bangladesh: New Year's New Hope!!!

Quazi Tarikul Islam¹, Homayra Tahseen Hossain²



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December 8, 2020 will remain as a historical date in the global history of devastating COVID-19 pandemic. On that day, just one year after the first reported case of COVID-19 infection in Wuhan, China, a 90 year old lady Margaret Keenan has become the first person in the world to be given the Pfizer COVID-19 vaccine at University Hospital in Coventry, UK¹. Calling the day “V-day”, Health Secretary Matt Hancock said, “*Today marks the start of the fight back against our common enemy, the coronavirus.*” Scotland’s First Minister Nicola Sturgeon said: “*Today we should all allow ourselves a **smile** - but we must not drop our guard.*”

Not only in terms of human loss, massive penetration of Corona virus has led to substantial hindrance in economic growth worldwide. The vast majority of people are still vulnerable to coronavirus. Having an effective and safe vaccine, alongside better treatments, will be “the” exit strategy. A vaccine is a biological preparation used to stimulate the production of antibodies and provide immunity against one or several diseases, contains agent/s which resembles a disease-causing microorganism and is often made from weakened or killed forms of the microbe, its toxins, or one of its surface proteins, mRNA and DNA. Several factors need to be considered during vaccine development like safety, efficacy, duration of immunity, doses (Single or Multiple), and storage. Vaccine development occurs through multiple stages: Exploratory/Academic Stage, Pre-clinical stage, Clinical Development, Regulatory Review and Approval, Manufacturing and Quality Control. Clinical Development stage again has three phases: Phase 1 Safety trial, Phase 2 Expanded trial & Phase 3 Efficacy trial. Usually a vaccine require more than 10 years to come in to use but in

this pandemic for the sake of human life many pathways have been minimized to bring the vaccine in use without compromising safety, and efficacy .

There are currently more than 50 COVID-19 vaccine candidates active in trials. WHO is working in collaboration with scientists, business, and global health organizations through the ACT Accelerator to speed up the pandemic response. When a safe and effective vaccine is found, COVAX (led by WHO, GAVI and CEPI) will facilitate the equitable access and distribution of these vaccines to protect people in all countries². People most at risk will be prioritized.

The big breakthrough occurred when Pfizer/BioNTech published its first results in November, showing the vaccine is up to 95% effective. On December 2, 2020 the UK became the first country in the world to approve the Pfizer/BioNTech coronavirus vaccine for widespread use³. The stunning results from COVID-19 vaccine trials by Pfizer-BioNTech and Moderna raised hopes across the world in the battle against the deadly virus, but what is the situation in our country? Will the people of Bangladesh have access to those vaccines as fast as they expect?

Actual scenario is not that promising. Experts find big challenges for Bangladesh to avail benefits from the two vaccines due to its existing poor cold chain. They said the mRNA technology-based vaccines developed by Moderna and Pfizer need to be stored at minus 70-80°C temperature, but the country has a cold chain having the capacity of preserving life-saving drugs and children’s vaccines at temperatures as low as minus 20°C under the EPI framework⁴. Another problem is storage capacity. A large part of the country’s current vaccine cold chain is occupied with Measles-Rubella (MR) vaccine. A total of 3.40 crore children, aged between nine months to under 10, was

1. Chairman, Bangladesh Journal of Medicine. Professor of Medicine, Popular Medical College, Dhaka
2. Associate Professor of Medicine, Popular Medical College, Dhaka

supposed to be given the MR vaccine in March last, but this campaign was not held due to the coronavirus outbreak. *“If we can't vacate the cold chain by giving the MR vaccine to the children, where will we keep the new vaccine? So, we need to have a plan about the preservation of the vaccine maintaining its quality,”* said Dr Abu Jamil Faisal, a member of the public health expert team for the eight divisions formed by the government.⁵

Experts of National Technical Advisory Committee suggested the government to improve the capacity of the existing cold chain and ensure other required logistic support so that the vaccine can be delivered to the upazila level for fair distribution. A complete SOP has been prepared and submitted to the ministry of health for execution under the guideline of WHO.

Health Minister Mr. Zahid Maleque said the government has recently signed a memorandum of understanding (MoU) on November 5, with the Serum Institute of India (SII) and Bangladesh's Beximco Pharmaceuticals to get three crore doses of the vaccine developed by Oxford University.⁴ This vaccine may be one of the easiest vaccines to distribute, as it does not need to be stored at very cold temperatures. It is made from a weakened version of a common cold virus from chimpanzees, that has been modified to not grow in humans³.

Bangladesh's government announced at a news conference on 30.11.2020 that 30 million doses of Oxford-Astra Zeneca COVID-19 vaccine are expected to be available for patients in January⁶. The government has already allocated taka 7.35 billion (around \$87 million) to purchase the vaccine, said the country's Cabinet Secretary Khandker Anwarul Islam, adding: *“People will get it for free.”* Once the vaccine is developed, Bangladesh will get it via the institute. The vaccine will be available for 15 million people, as two doses are needed per person 28 days apart. The process of importing the vaccine is expected to start in January: New Year's new hope. Bangladesh will also get 68 million doses of the coronavirus vaccine from the Gavi Vaccine Alliance⁶. To ensure smooth financing, the government has already sent letters to donor agencies seeking loan assistance to buy the vaccine.

Regarding Vaccine distribution, it should be done in line with WHO protocols that determine who will get the vaccine first. Government sources said that, in the first phase, frontline workers like doctors, medical workers, and elderly will get the priority when the vaccine will be distributed⁷. The COVID-19 vaccine is not being offered to pregnant women & children under age 18; as researchers don't know enough about how COVID-19 vaccination can affect children, pregnant women or their babies.

We need a priority list and a vaccine distribution policy to avoid chaos. The government must communicate with people and prepare them to accept the reality by giving them proper information and presenting the real scenario before them. Or else, the experts said, when some vaccine doses will arrive in the country, people may create a chaotic situation in hospitals and vaccine distribution centres. *“So, we need to tell people in advance who may get it first and its reasons.”*⁵

The quality of the vaccine will degrade if the doses are not properly preserved, transported, distributed and vaccinated. That's why we need a **monitoring team** who will oversee whether the vaccine is transported properly and preserved everywhere maintaining the right temperature. The expert said the team will also examine whether there are any reactions or side effects of the vaccine on people since there has been no trial of any vaccine in Bangladesh. A **high-powered committee**, incorporating capable people, should be formed immediately to make appropriate plans and a policy and ensure their execution. *“This committee will have to take many crucial decisions, regarding selecting a vaccine, collecting funds to procure it and other logistics support, and rightly preserve and distribute the vaccine by checking irregularities,”* said Dr Be-Nazir Ahmed, former director (disease control) of the DGHS⁵.

We can conclude with the hope and pray that Bangladesh will probably get a suitable COVID-19 vaccine next year 2021 by January. But we have to take necessary preparations in advance for procuring the vaccine, its preservation and distribution; so that we can finally win the battle against the invisible enemy & had a smile on our face in the upcoming New Year. Despite availability of vaccine we must maintain health etiquettes for years to come.

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