



MAKING RESEARCH ATMANIRBHAR

We need an enabling ecosystem for development of vaccines, studies on new diseases

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BEFORE THE COVID-19 pandemic hit the world, we would often refer to science-fiction for cutting edge research such as brain transplants or bioengineering. But in my three decades of work in clinical medicine and medical research, never have I come across something that has transformed the global health landscape as much as the humble vaccine.

While the pandemic has highlighted their importance, vaccines have always been the frontrunners in saving lives: With their help, we are able to prevent the death of two to three million children globally every year. It is because of vaccines that we managed to eradicate highly contagious diseases such as smallpox, which used to kill millions only a few decades ago. In India, vaccines have helped us defeat polio — the country was certified polio-free by the World Health Organisation (WHO) in 2014. In 2015, the country also eliminated maternal and neonatal tetanus. While we might not be certain about the timeline for the elimination of COVID-19, an effective vaccine is the world's best shot at reducing the transmission of this highly contagious disease.

While developing a vaccine for COVID-19 is a global health priority, a comprehensive approach is also required towards fast-tracking the development of vaccines to tackle emerging diseases. India is one of the largest producers and exporters of vaccines in the world. In fact, many vaccines in the national immunisation programme are produced in India and manufactured by Indian companies.

To make India a global leader, there should be concerted efforts to activate the triple-helix model of innovation that involves intensifying collaboration between research institutes, industry and the government. We need to approach research and innovation from the bottom-up — this means increasing research in biotechnology, medical innovation, and public health at the university level.

This has been made possible through regular investments in ramping up our manufacturing capacity through programmes like Make In India. However, innovation and research in vaccines have not been adequately prioritised. India needs early-stage financial investment to propel a research and innovation ecosystem for the development of new vaccines.

The Indian Council of Medical Research (ICMR) has made great strides in that direction — it has developed effective vaccines against Japanese encephalitis (JENVAC), shigella (technology transfer to Hillman Labs) and the Kyasanur forest disease. ICMR has also provided research funding for initial and validation studies for the rotavirus and polio vaccines.

ICMR is collaborating with Bharat Biotech International Limited (BBIL) to develop a fully indigenous vaccine for COVID-19 using the virus strain isolated at the National Institute of Virology in Pune. The strain has been successfully transferred from ICMR to BBIL. We will now seek fast-tracked approvals to expedite vaccine development, subsequent animal studies, and clinical evaluation of the candidate vaccine.

ICMR has also collaborated with the Serum Institute of India and Oxford University to fast-track clinical trials of the live attenuated recombinant vaccine for COVID-19 developed by the Oxford Group. These trials and developments will pave the way for a future where we could live without the fear of the contagion that is currently raging in the world.

These trials are steps in the right direction. But to make India a global leader, there should be concerted efforts to activate the triple-helix model of innovation that involves intensifying collaboration between research institutes, industry, and the government. We need to approach research and innovation from the bottom-up — this means increasing research in biotechnology, medical innovation, and public health at the university level. The ICMR is in the process of setting up the National Institute of One Health to study zoonotic diseases, enabled by the Rs 20-lakh-crore package recently announced by the government. But more work needs to be done. One lesson from the COVID-19 pandemic is that we need more than one research institute to study zoonotic diseases.

The government and academia must come together to prioritise the development of cost-effective tools of public health importance like vaccines. The country needs a comprehensive approach to mobilise resources for this purpose. Indian researchers, and the country's public health community at large, have stood up to the various public health challenges faced by the country. It is time the government, technical experts and private companies ensure that these researchers have access to the resources and tools that can make India truly atmanirbhar.

The writer is Director General of ICMR and Secretary, Department of Health Research