

Developing vaccines to bust future pandemics.

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Abstract

The COVID-19 episodes are the worst infectious infections that have ever been documented. An influenza virus that was four to five times more lethal than COVID-19 caused a pandemic that swept the world a century ago. Furthermore, Coronavirus outbreaks (SARS and MERS), which are around 20 and 70 times more deadly than SARS-CoV-2, respectively, have only occurred this century. Only the non-transmissibility of COVID-19 prevented a catastrophe of inconceivable proportions. Vaccination is the cornerstone of modern culture's defence against the threat of infectious illnesses. They will be crucial to any subsequent response and our best line of defence against pandemic threats.

Keywords: SARS-CoV-2, COVID-19, Infections, Vaccination, Safety and efficacy

Description

COVID-19 experiences are worst among the infectious diseases and were never seen earlier. A flu pandemic that swept the globe a century ago was brought on by a virus that was four to five times more deadly than COVID-19 and just this century alone has seen outbreaks brought on by Coronaviruses (SARS and MERS), which are around 20 and 70 times more deadly than SARS-CoV-2, respectively. Only the absence of COVID-19's transmissibility kept a disaster of unimaginable dimensions from happening.

The mainstay of how contemporary cultures combat the threat of infectious diseases is vaccination. They will be essential to any future reaction and our most effective defence against pandemic dangers. An impending pandemic can be managed and controlled more quickly if an effective vaccine is developed and used quickly.

We should start working to make the world to be able to develop a new vaccine to combat the next "Unknown Disease." A pandemic causing disease danger can be eliminated in just a little more than three months. Delivering a vaccine in 100 days would give the world a fighting chance to put an end to the existential threat posed by a future pandemic virus. This is especially true when combined with improved surveillance that provides early detection and warning, as well as with swift and effective use of non-pharmaceutical interventions.

When we are saying "Unknown Disease" it means we don't know anything about it. It's a brand new illness about which we won't know anything when it first appears; it might be fatal, very contagious and dangerous to our way of life. Additionally, we are unsure of how or when it will transcend the viral divide and infect humans. What is certain is that the next disease X is on its way, and we must be prepared.

Plan ahead to avoid: The previous record for a vaccine was a live attenuated mumps vaccine, which took just under 5 years to produce until the SARS-CoV-2 virus appeared. In contrast, it took 326 days from the time the SARS-CoV-2 virus was discovered until a COVID-19 vaccine was available for emergency use. Cutting that timetable to 100 days is entirely doable by tightening and reducing at each development stage and by rethinking how we establish safety and efficacy for emergency response vaccines.

When, not if, the next unknown disease will arise: Human monkey pox, drug resistant malaria, typhoid, plague, the fatal Nipah and MERS viruses, terrifying avian flu variants and the mosquito borne Zika and Chikungunya viruses are just a few of the pathogens that are constantly emerging and re-emerging. Although not every new illness has the potential to become a pandemic, the next one that does might be just as terrible as COVID-19, if not worse.

Today, it is known that approximately 260 viruses belonging to roughly 25 viral families can infect humans. Realistically, we can't develop individual new vaccines for each of the several hundred or more potential or emerging threats, let alone the 1.6 million or so additional viral species that may exist in mammal or bird hosts but haven't yet been identified. However, we can create vaccines for the prototypes of these threats. To put it another way, we can concentrate our efforts on viruses that exhibit some or all of the negative characteristics of a certain viral family.

Invest today to save tomorrow: If the COVID-19 catastrophe taught us anything, it's that pandemics are exorbitantly expensive. It is estimated that COVID-19 will have cost the globe \$28 trillion over the course of five years by the year 2025. We will never be able to calculate the human cost, but there is little doubt that its repercussions will last for many years.

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