

## Should COVID-19 vaccination be made mandatory?

Sir,

The COVID-19 pandemic triggered by the novel coronavirus SARS-CoV-2 has had a profound effect on the socioeconomic fabric of daily life, travel, and the wider health-care system of the world. Traditionally, vaccination has been an effective way to prevent viral infection, stop its transmission, and develop herd immunity.<sup>[1]</sup> The development and the roll-out of safe and efficient COVID-19 vaccines have been “shot in the arm” in the global effort to fight this pandemic by providing individual protection against the novel coronavirus SARS-CoV-2.<sup>[2]</sup>

### INDIVIDUAL PROTECTION, RISK REDUCTION OF SERIOUS ILLNESS, INPATIENT HOSPITALIZATION, AND MORTALITY FROM COVID-19

There is no effective cure currently available for COVID-19. However, recent reports indicate that a single dose of either the Oxford-AstraZeneca or the Pfizer-BioNTech vaccine can provide high level of protection against COVID-19 symptoms, serious illness, and avoid the need of hospitalization by 80% including reduction in mortality from the disease.<sup>[2]</sup> These findings add to growing evidence that the vaccines are working to reduce infections and save lives.

### LIFTING OF LOCKDOWN AND THE OPENING OF SCHOOLS AND ECONOMY

A sustained reduction in detection of new cases, viral transmission, hospital admissions, effective roll-out of the vaccination program, and management of evolving mutant strains of SARS-CoV-2 virus are the key parameters to deliver us out of the current lockdown restrictions. These factors along with infection control strategies will be influential in determining the safe opening of schools and the wider economy including the freedom of travel.

### “SOCIAL VACCINATION”

It is imperative to inoculate most of the population to protect them, reduce the chance of viral transmission, and decrease the prevalence of COVID-19. “Social vaccination” was a key lesson from the 2018 to 2019 measles outbreak in Israel that could aid us in the COVID-19 response. Authors have emphasized the need for a social-based approach and the use of

epidemiological data as a basis for decision-making about assigning vaccination policies.<sup>[3]</sup>

### THE CHALLENGE: VACCINE HESITANCY AND REFUSAL

Respecting a person’s autonomy of self-determination, the principle of beneficence – the duty to do good and greater justice of protecting the community at large should be the driving force in achieving universal immunization. The less burdensome it is for an individual to do something that prevents harm to others and the greater the harm prevented, the stronger the ethical reason for mandating it. The concern from “vaccine hesitancy” is that the unvaccinated people could form a deadly reservoir of the coronavirus, which would cause further outbreaks of infection or lead to a sustained level of prevalence of the disease. Various inventive strategies have been suggested to tackle vaccine hesitancy.

### HERD IMMUNITY

Though a debatable concept, widespread vaccination is necessary to reach herd immunity – where enough people are immune to prevent disease transmission. Randolph HE and Barreiro LB clearly highlight the importance of a safe and effective mass vaccination campaign to build widespread SARS-CoV-2 immunity.<sup>[4]</sup> On the other hand, the concept of natural immunization of global populations with virus over a period is an inherently flawed one and may lead to significant further mortality in the world.

### UNIVERSAL VACCINATION

Lessons from SARS outbreak in 2002–2004, provide clear guidelines of the necessity of the concept of global response to pandemics.<sup>[5]</sup> Community-shared drive of vaccination across the borders will be necessary for worldwide control of COVID-19.

Thus, global pandemics require global solutions; mandatory and universal accessibility to COVID-19 vaccination may be key factors in the effective control of the current pandemic.<sup>[6]</sup>

However, despite the unquestionable benefits of COVID-19 vaccination in decreasing the incidence, severity, and transmission, whether such vaccination should be made mandatory is debatable. There are multiple arguments for the same.

## INFORMED CHOICE AND LEGAL ASPECT

The simplest reason for this which can be offered includes the basic human right of exercising his choice for a drug/vaccine. There is a large part of society which does not trust vaccine trials and efficacy. Making such vaccines mandatory can spark legal issues and roadblocks for the effective implementation of vaccination drives.

## REINFECTION

COVID-19 has spread like a pandemic for over a year now. There have been many reinfections/relapses reported.<sup>[7]</sup> These incidences along with the studies showing waning seroprevalence put a question mark on the long-term efficacy of the vaccines. Even though it has been postulated for vaccines to have long-term protection, real-world studies from time to time are required to prove this. Many experts believe that multiple and frequent doses of the COVID-19 vaccine may be required. Viral mutation can also make the vaccine less or ineffective as demonstrated recently by the South African mutation on the AstraZeneca vaccine.

## EFFICACY

There are many vaccine options available with time. In India, there are two approved vaccines at present – COVAXIN (inactivated) and COVISHIELD (Adenovirus carrier vaccine). The Phase III data of COVAXIN have not been made public despite approval and use of the vaccine for over 1 month now (approved on January 3, 2021 and started in use on January 16, 2021). This lack of data questions the efficacy of the vaccine and also adds to the hesitancy of the beneficiaries to get vaccinated.<sup>[8]</sup>

## ADVERSE EVENT FOLLOWING IMMUNIZATION

An adverse event following immunization (AEFI) is defined as any untoward medical occurrence that follows immunization, which does not necessarily have a causal relationship with the vaccine's usage. AEFI is categorically reported as minor, severe, or serious. Minor AEFI are reactions that are common, self-limiting, e.g., pain and swelling at the injection site, fever, irritability, malaise, etc. Severe AEFI are nonhospitalized cases with increased severity that do not lead to long-term problems but can be disabling. Even though the AEFI reported in Phase I and II trials of vaccines like COVAXIN are minor and comparable to other vaccines, large-scale Phase III and postmarketing use will unveil the real-world data.

## LIMITED AVAILABILITY

There are a handful of countries that produce vaccines used worldwide. India has supplied many vaccine doses to many developing countries. If vaccination will be mandatory for all, it will impede the global availability

of the vaccine; specially to developing nations with huge disease burdens. There is definitely no possible way of manufacturing doses enough to vaccinate the entire world. Making vaccination mandatory can spark hues and cries in the community.

Eventually, even for herd immunity, the need for coverage of COVID-19 vaccination is 50% in view of reproduction number (R0) value ranging from 2 to 3 for COVID-19.<sup>[9]</sup> Thus, making vaccination mandatory is not required, rather encouraging people and building their trust in vaccine and subsequently, giving them an informed choice will be the best way ahead.

## CONCLUSION

The COVID-19 vaccination is effective and safe with the currently available vaccines. There are benefits and reservations of undertaking COVID-19 vaccination. A lot of doubt still exists about their routine use across the population. Hence, although we believe that it could be offered and made universally available to confer better immunity against COVID-19, we also agree it should be a shared decision-making process. Public education and developing trust in vaccination may be a preferred choice at the current time.

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## Conflicts of interest

There are no conflicts of interest.

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