

White Paper: Logistic Solution For Fair Distribution of COVID Vaccine

For Old Times' Sake

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Abstract

This paper presents a crisp solution to the impending problem of end-to-end distribution and delivery of COVID vaccines in India. The COVID-19 pandemic has already affected the lives of almost everyone around the country. In point of fact, the virus has taken the lives of around 1.44M people by now [1]. The vaccines that will prevent the virus that has led to a global pandemic are finally close to finishing their trials. Hence, these vaccines that are going to be manufactured (or imported) soon, must reach as much of the population as possible through an unbiased system. But the question is, how would India distribute the vaccine to every nook and corner of the country, that too without any hoarding and corruption getting emerged. The NITI Aayog has already told, that the sufficient dosages of the vaccine, as required for the Indian population, will not be available at once. This creates huge odds of hoarding and inequitable distribution of vaccines. In this paper, we propose a number of effective strategies that the government can implement to overcome the challenge of uneven distribution of vaccines, by also keeping in check the corruption that might arise. We also propose some ideas for fast and efficient delivery of the vaccine at an unprecedented pace.

Scope and Purpose

The main aim of the paper is to propose a way that when implemented will ensure the equitable distribution of COVID vaccines to every section of the society starting from the vulnerable ones. Establishment of an effective delivery system by monitoring every step of the supply chain through IT infrastructure. The target is to eliminate all the possibilities of unethical practices by guaranteeing transparency to the citizens. It is also the key to ensure that access, or lack of access, is not used to foster political patronage.

The Problem

The vaccines are being developed worldwide and will be made available to the public in the forthcoming times. However, full coverage of the population during

the initial productions will not be achievable and hence the mass might face problems regarding the regulation and delivery of vaccines.

A lack of a robust and comprehensive system might cause an ineffective and biased distribution. The conventional method of making the list, based on priority can involve some false names that actually do not exist in the data. This might fail to deliver the vaccine to the exposed majority. The unscrupulousness in the process and limited transparency in the stock level and distribution might lead to stocking up and black marketing of vaccines.

The Solution

Prime Minister Narendra Modi has assured citizens that everyone in the country will be inoculated once a vaccine for the highly-infectious coronavirus becomes available. According to him, a digital platform was being prepared to enroll, track, and reach the beneficiaries [1]. He has suggested developing a vaccine delivery system identical to one that the election system of our country follows. The national vaccine distribution plan is being formulated with the assumption that limited volumes of the inoculation will be available in the first few months of production [2].

Proposed solutions:

Priority-based distribution

They may distribute the vaccine on the exposure based priority. The most exposed people i.e. essential service providers and their families, hospital staff, police staff, and all the people who are the most exposed ones must avail vaccines initially. Followed by the old age people having any kind of chronic or genetic disease such as heart patients or diabetic ones, trailed by the schooling kids before reopening of their schools and colleges.

IT-enabled supply chain & Physical logistic infrastructure

It can be seen that demand for the vaccine is higher than the production so the price of the vaccine might be higher. In case a monopoly exists, it will give manufacturers a free hand for setting a higher fix. Then, it becomes the duty of the government to provide the vaccine at a subsidized price and ensure the safe delivery of the vaccine. Currently, the government is planning to distribute vaccines following the lines of how elections happen in India i.e through forming various centers and calling people to the center and vaccinating them.

But this system is not the most effective way since it involves a dire requirement of deploying some armed or police forces to maintain a secured and systematic process such that no attacks can occur at the center. This system lacks

transparency and security. Not only that around 400 Crore people are out of electoral rolls including people of all ages.

Instead, we can distribute vaccines through maintaining a central digital list (Aadhar list) on a digital framework integrated with Machine Learning algorithms to find out the false information or false entry. An application through which users can check the real-time information of the current status and their number in the list so that they can wait patiently. Around 25 crore population are not having Aadhar cards so for them, the system might accept other proofs such as ration cards can be one of the alternatives [3].

A method that ensures that the vaccine is delivered to the user for whom it is intended for. The distribution can be done under two subcategories: urban and rural distributions. The course of actions involved for Urban distribution can be to use the fingerprint verification, retina scan, Aadhar card for authentication trailed by some OTP, and email confirmation of the end-user with the entry in the list. For rural distribution, the government can come up with teams of volunteers who may visit from village to village for a vaccine drive. The rule should be made that the package will only be unboxed if the identity matches. This would be an effective technique to ensure security and, maintain and share data regarding the count of vaccines that are sent out of the warehouse. A digitalized database should be maintained of the people who are immune, and they should be given any mark that intimates his immunity.

Awareness for vaccination

A large population in India feels that there is nothing like a corona. They have different beliefs and they assume that they are already immune to the virus. Some assume that this virus is much the same as any other virus and they can easily get recovered without being tested and treated. This creates a possibility that some percentage of the population might find no relevance in vaccinating themselves. Hence, it is required for the government to arrange an awareness program for those people through digital and offline platforms.

Public-private partnership

The government can form partnerships with private logistic firms or e-commerce firms, such as Amazon which has extensive data capabilities can help in explicit and speedy delivery of vaccines. Since they are one of the reputed and trusted firms, the chances of fault and malpractice in the supply chain that can occur minimize. In this way, consumers will also be able to track their orders through real-time visibility on shipment and current status.

Summary

Equitable distribution of the vaccines will help to end the phase of this global pandemic. In developing countries like India, where a huge population is struggling to fulfill their basic needs, it becomes of utmost significance for the government to provide a whole lot of diversity an opportunity to get themselves immune from this deadly disease through a very honest and feasible process. The above-proposed ideas may help in the fair and transparent distribution, with gradual and structured production of vaccines through appropriate integration of technology and beliefs.

References

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