Preparing for Intelligent Infrastructure for Mass Immunization Related Supply Chain and Monitoring Process

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Abstract

The pandemic of Covid 19 caused by SARS-CoV-2 has high contagious spread and mortality. The control of condition with vaccination is the next major event that will require meticulous implementation with accurate planning. However, there are many challenges in this implementation, especially in the country like India. Hence, in preparation of the vaccination simulated evaluation of the infrastructure and resources with identification of risks, positive forces and negative forces will be a major key.

Methodology

COWS is the methodology for simulated planning from the data of foundational resources. The simulations of all scenarios to create data and create influences of the known or unknown data from similar experience is the key of this method.

Results

This study included 35- 49 statistically calculated simulations of various parameters that will be crucial in implementation of mass immunization of COV-ID19 vaccine. The study demonstrates that artificial intelligence (AI) and immersive analytics (IA) plays significant role in planning and creating intelligent infrastructure for all stage of vaccination, its manufacturing, supply chain, immunization planning and implementation. The AI based tools will help prioritization of zones and people based upon risk to person and reverse risk to community. The study also demonstrates that Arogya Setu-based registry will be an effective digital vigilance and monitoring tool to ensure success and compliance of the immunization programme and prevents risk of serious Adverse Incidents. Repurposing of existing resources with technology intervention like use of IoT / NFC / GPS will help quickly mitigate the challenges at various levels of implementation.

Conclusions

During mass immunization program, the major challenges will be optimized and handled with three main influencing factors viz. Use of AI, Effective digital monitoring and Repurposing of existing other resources with IoT, NFC or GPS protocols for driving the vaccination program requirements.

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