

Challenges and Concerns in Setup of COVID Vaccination Centre: Experience from 2 Centres in Mumbai

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Abstract

Since the beginning of COVID-19 pandemic and Lockdown on March 2020 till date, measures like hand hygiene, social distancing and testing have worked only partially to contain the cases and deaths. Cooper Hospital, Mumbai, was one of the 10 nodal centres identified by Prime Minister's Office in January 2021 to launch the Nationwide Vaccination drive, along with other public hospitals in Mumbai. We aim to highlight the challenges of vaccination setup and procedures in initial phases and discuss concerns/effect on our department workforce and workplan. We reviewed the patterns, procedures and problems faced by our vaccination centre from January 15th till March 15th (2 months). We also looked into setup at another centre in Mumbai. Over 37,000 vaccine doses have been administered in our center alone by March end, and issues were analysed in detail with special reference to logistics & department work. Adverse Events Following Immunization (AEFI) were very few. We found that anxiety about side effects, concerns about choice of vaccine and long-term effects were the major impediments to vaccination. Although vaccination is not the final answer, it is an important tool to improve our response to the pandemic. Restructuring available infrastructure is essential in pandemic situations. Proper procedure, counselling and choice in the way forward in this crisis.

Keywords: COVID vaccine, covishield, vaccination

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Introduction

Since the beginning of COVID-19 Pandemic and Lockdown on March 2020 till date, measures like hand hygiene, social distancing and testing have worked only partially to contain the cases and deaths. India's drug regulator has given emergency approval to Covishield and Covaxin Vaccines in the national program launched under guidance of PM Narendra Modi. For both, currently 2 separate doses – 0.5 ml Intramuscular, deltoid (ideally), at 4-8 weeks interval is recommended.

Our centers (Cooper and Nair) are giving Covishield through Municipal Corporation of Greater Mumbai (MCGM) supply free of cost, and in Cooper hospital alone over 37,000 doses have been given from the start of the program. As of 2nd March 2021, a total of 15,620,749 vaccine doses have been administered in India.^[1]

The Government of India has advised people to receive the complete schedule of two doses irrespec-

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tive of past history of infection with Covid-19 as this will help in developing a protective immune response against the disease.

Central Government has mentioned the five key principles for Covid-19 vaccination.^[2]

1. Ensure peoples participation.
2. Utilize the experience of elections.
3. Universal immunization program.
4. No compromise on scientific and regulatory norms.
5. No compromise of existing healthcare services.

The preparations for vaccine roll out in India went on in full swing, the Government in the meantime organized dry runs that not only iron out many operational hitches but also to anticipate what fire-fighting will be needed in a real time problem. Success will hinge on collaboration of complex networks of Government companies, health workers and public and for this three things needed to be in place:^[3]

- Vaccine supplies (cold storage, distribution, syringes and needles)
- People to implement them (vaccinator staff to document)
- People to be vaccinated.

Some of the hurdles in setting up a vaccination centre are:

1. In a country like India, crowd management and decision of an appropriate space to carry out and set up a vaccination Centre marked the start of the hurdles. This included managing minor logistics like procuring and maintaining Ice Lined Refrigerators (ILR) in the hospital, thermometers properly placed to monitor the temperatures and ensuring every ice pack is leak-proof.
2. Besides informing the front-line workers who will be eligible for first roll out, education of all the stake holders is needed regarding the efficacy and safety of vaccine.
3. Data operators, staff deployment, and proper planning for the execution of vaccination by establishing a good network system.
4. Data sheets of all eligible individuals to be prepared
5. Proper training of the healthcare staff and personnel deployed to be carried out in vaccination program.
6. To equip the vaccine centres to handle any emergency fall out of vaccination with the ready access of staff, medicines, equipment including ambu-

lances in the remote possibility of reaction.

According to the government guidelines, the vaccination drive is divided into 4 phases:

1. Phase 1- Health care workers
2. Phase 2- Front line workers
3. Phase 3- Senior citizens and 45 years above with comorbidities
4. Phase 4- General citizens

Setup of the Covid Vaccination Site at Cooper Hospital

A team led by the Dean and Nodal officer Head of Department, Community Medicine explored all available areas and identified an abandoned building (old canteen area) which was renovated and refurbished in record time. A 10-day training programme was taken, which started from 26th December 2020 for all the staff Nurses, student nurses, Interns, all residents and doctors from departments of medicine, anaesthesia, community medicine. The entire team was explained about the setup of vaccination site, operationalization of the session, safe injection practices, key messages for beneficiaries, biomedical waste management, adverse events following immunization (AEFI) and management of AEFI.

The vaccination centre is divided into 3 zones which include waiting area/registration area, vaccination area and observation area. We have a separate entry and exit to avoid criss-cross movement of beneficiaries at session site.

Before starting the actual vaccination drive, we conducted a mock drill on 13th January 2021, to get an idea of the entire setup and to find if there are any lacunae or any difficulties in conduction of the vaccination drive.

After 1st mock drill we implemented certain changes to improvise the setup. Yellow arrows were put up directing the beneficiaries the way towards observation room following vaccination. A final mock drill was conducted on 15th January 2021 following which we started the vaccination drive on 16th January 2021 for phase 1.

The vaccination centre at Dr R N Cooper Hospital was launched by our Hon. Prime Minister on 16th January 2021. All the session sites were connected to PMO (Prime Minister's Office) for the launch. Cooper hospital was identified as one of the 10 nodal centres for two-way interactive interaction with PMO during the launch. The entire setup was covered by media.

Setup of the Covid Vaccination Site at Nair Hospital

On 16th January, 2021 Covid vaccination Centre at Nair hospital was started. It was very challenging to find a separate space for vaccination in the hospital as all available space was already being used by other departments for patient care especially since this was designated as a COVID Hospital too. Finally, a suitable location near the nursing quarters was selected. This used to be a tutorial room, but now had to be repurposed. A canopy was set up outside the entrance to the building, along with barricades to allow smooth unidirectional flow of beneficiaries. Banners had to be prepared to prominently display the center. Proper signage had to be made that would guide the beneficiaries in the correct direction. Anticipating long queues, provision for water and washroom facilities also had to be done. Multiple booths for registration, identity verification, screening for comorbidities, vaccination and certificate generation had to be allocated and equipped. An observation area that has emergency medications, a bed and a crash cart including a defibrillator had to be prepared. Accommodating all the above in this area was a tall order but active supervision and suggestions made sure this became a reality in time for the national launch of the campaign. Once the Anatomy was ready, functionality was the next hurdle. There were multiple bottle-necks identified, from the registration counter, the number of vaccination booths right up to the observation area. Accordingly, adequate number of skilled persons had to be employed and trained to handle the same. Few Junior residents were designated as the troubleshooters while faculty were always on site by rotation for supervision. Dry runs helped to understand the expected flow of beneficiaries and the need to fine-tune the services offered. The balance between operational efficiency and social distancing was another tough task but the same was optimized.

Practice Protocols in Vaccine Centres

In the waiting area, all the beneficiaries are made to sit with social distancing. Facility for hand washing, sanitization and drinking water is also available.

- Initially, we used to receive a list of beneficiaries to be vaccinated from Expanded Program on Immunization (EPI) department, who would call or send message the beneficiaries to inform them about their vaccination schedule. Our vaccination officer would identify the beneficiary based on the available list and message received by beneficiary. Ask beneficiary to wash or sanitize hands before

entry, advise beneficiaries to follow COVID appropriate behaviour i.e. wear mask/ face cover, maintain physical distance from each other and send them to the vaccination area. Later on, the facility for allotment of beneficiaries was also provided. The beneficiaries who were pre-registered could walk in directly to the centre where the vaccination officer would allot them a vaccination site and send them to the vaccination area. A chit is given to the beneficiaries at the entry point mentioning their name, date and the session site number.

- In the vaccination area, there were 5 session sites and each site had one verifier and one vaccinator. One AEFI kit is also placed on each site. The verifier would cross check the name of the beneficiary in the Co-WIN application and report vaccination in the Co-WIN app following vaccination. The time of vaccination is written on the chit given to the beneficiaries which is then checked in the observation room where they are made to wait for 30 minutes after which out time is written on the chit and then the beneficiaries can walk out.

Verification of the identity of the beneficiary is done through:

- Aadhaar Card
- Other Govt photo ID
- Service ID/ Proof of employment of healthcare worker.

Procedure for Vaccination

The vaccinator would then vaccinate the beneficiaries keeping the following points in mind:

□ Ensuring privacy of beneficiary:

- Allow only one beneficiary at a time in the vaccination room
- Ensure a female attendant if a male vaccinator is vaccinating a female beneficiary

□ Ensuring safe injection practices:

- By washing hands with soap and water before and after the session
- Covering any small cuts on skin
- Avoid giving injections at the injection site where there is local skin lesion, cut or dermatitis
- using AD syringes for COVID-19 vaccination
- Using a new sterile packed AD syringe for each injection for each beneficiary
- Discarding AD syringes that have damaged packaging, or have passed the manufacturer expiry date
- Do not pre-fill syringes

- Sanitizing hands before vaccinating each beneficiary
- **Biomedical waste management as per guideline:**
 - By cutting the hub of the syringe after giving the injection
 - Store broken vials in the blue puncture proof container
 - Segregate and store the plastic portion of the cut syringes in the red bag
 - Cotton swabs soiled with blood in the yellow bag
 - All other non-infectious wastes will be collected as municipal waste in a separate bag
 - Immunization waste is collected by designated person for safe disposal at the end of the day
- **Provide key messages to beneficiary:**
 - Detail of the COVID vaccine given
 - Contact the nearest ANM/ ASHA/ Medical officers for any support post vaccination
 - You will receive the date and venue for second dose through SMS
 - Follow COVID appropriate behavior even after vaccination
 - Ask beneficiaries to wait for 30 minutes in observation room
 - Manage and report AEFIs, if any. Transfer to designated AEFI Management Centre if required.

Post Vaccination Care

After vaccination beneficiaries are sent to the observation area where they are observed for 30 minutes by a team of doctors which include medicine and anaesthesia residents who are available in observation room at all times.

- They ensure that the beneficiaries maintain physical distancing
- Ensure that each beneficiary is under observation for 30 minutes
- Inform vaccinator in case any beneficiary has adverse event
- Support vaccinator to manage the AEFI and inform the Medical Officer
- Beneficiaries are also explained about the AEFI and its management and to download the Covid vaccination certificate.

We also have a team of supervisors and coordinators who ensure:

- COVID Vaccine information/ education/ commu-

- nication (IEC) materials are displayed at the site
- Beneficiaries are mobilized in staggered way to avoid overcrowding at the session site
- One influencer to be present at the venue to support the activity
- Inform the beneficiaries that they will be informed the day and time of subsequent dose/ vaccination
- Provide the contact details of ANM/ASHA/ Medical officer to beneficiary for any support post vaccination, if required.

At the end of the day, daily reporting is also sent to the EPI department mentioning the date, name of COVID vaccination center, the number of beneficiaries vaccinated, total attendance, a separate count of beneficiaries received in the list, those vaccinated from the list, total add on vaccinated, total refusal and total AEFI. A separate report of vaccine stock, balance stock and vials used is also sent.

From 5th February onwards, we started with vaccination of the front-line workers (phase 2) along with the health care workers. Front line workers included:

- ✓ Sanitation workers
- ✓ Public Call Office staff
- ✓ Maintenance staff
- ✓ Mortuary staff
- ✓ Conservancy staff
- ✓ Administrative and clerical staff

From 15th February 2021 onwards second dose of health care workers was started. So a separate count was kept and reported accordingly mentioning the count of health care workers 1st dose, front line workers 1st dose and health care workers 2nd dose. Session sites were increased from 5 sites to 10.

The vaccination for phase 3 of beneficiaries started on 1st march 2021. It included citizens having age more than 60 years and citizens aged between 45-60 years having comorbidity.

New vaccinator module was being launched where the citizens could register themselves and book an appointment as per their convenience. The app also had feature to register health care worker and front -line worker for the 2nd dose.

Various changes were made for the proper functioning of the site and management of the crowd.

Since the app was updated, certain changes were made in the protocol like receiving the list of beneficiaries was stopped, details of the beneficiaries entered in

excel sheet was stopped to save the time. This helped us to vaccinate more people day by day. To manage the crowd, a pandal was set up on the ground and sitting arrangement for 500 beneficiaries was made. Also the arrangement for fans and water was made.

After the sessions ends a google sheet is updated of daily vaccine consumption and AEFI reporting before 6.30 pm. List of vaccinated beneficiaries is downloaded from the app and sent.

We also received various donations which helped in smooth conduction of vaccination:

1. Donation of newspapers for the waiting area and observation area by The Times of India.
2. 10 wheelchairs
3. Juices and biscuits for the staff.
4. Tea and coffee machine

Results

Total 37,247 vaccine doses have been administered in our centre alone by 31st March 2021, and issues were analysed in detail for the first 2 months, till 15th March with special reference to logistics & department work. AEFI were very few. We found that anxiety about side effects, concerns about choice of vaccine and long-term effects were the major impediments to vaccination. Table 1 and Figure 1 show details of vaccine beneficiaries at Cooper hospital.

Table 1: Vaccine Beneficiaries Cooper Hospital (2 months, till 15th March)

Covishield	Partially vaccinated	Fully vaccinated
HLW	10262	4775
FLW	3954	648
45 YEARS ABOVE	868	0
SENIOR CITIZENS	6566	0
Total	21650	5423

Adverse Events Following Immunization (AEFI)

- We assessed the concerns of our dept staff regarding vaccination PHASE 1,2

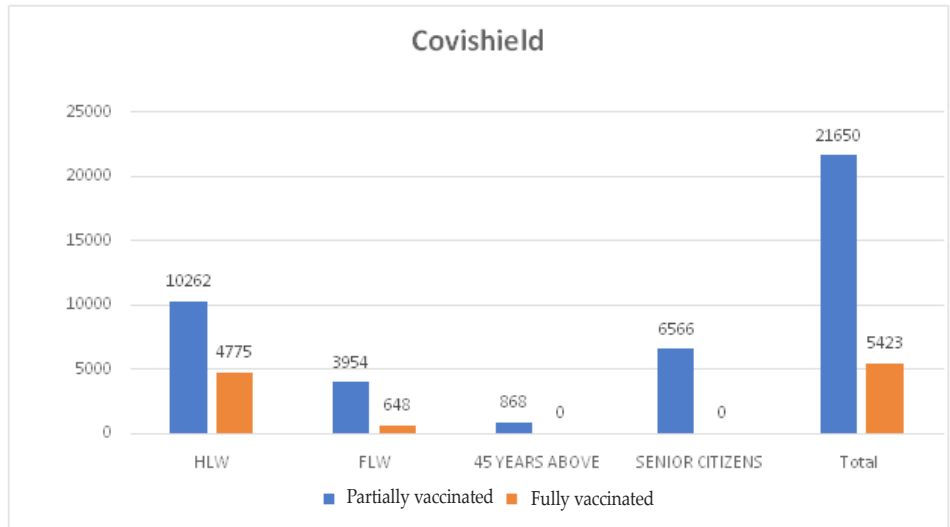


Figure 1:Vaccine Beneficiaries over 2 months in Cooper Hospital

- We noted any immediate side-effects and vaccine-related adverse events in all
- Of total 27,073 doses administered over 2 months we had reported 51 AEFI
 - ◆ Almost all were minor, including fever/ malaise/ bodyache/ heaviness of arm/ sleep-iness
 - ◆ One doctor required admission and 2 days observation for high fever
 - ◆ One case of cellulitis
 - ◆ One case of chorioretinitis

From 16th march 2021, we also started giving Covaxin for which 11th session site was created. We gave 943 doses till we ran out of stock.

Vaccine Hesitancy?

There was initially a slow pickup of the vaccination drive, particularly in the first week even amongst our Hospital staff although there was work place exposure to COVID to all. Concerns cited included

- Rotation duty and work schedules
- Lack of data on efficacy and dosage intervals
- Possibility of adverse reactions (AEFI)
- Already had COVID – 19, should we take?
- Long term concerns

To address these issues we had the following suggestions implemented across the departments with intensive counselling and sharing of information to the teams:

- Seniors to set an example by getting vaccinated
- Encourage juniors in your team

- Keep shift duties, time off after vaccination
- Give leeway for human nature!
- Motivate positively by using social media, internal WhatsApp groups
- Have discussions, audits, review meetings within the departments

Conclusion

Although vaccination is effective, it is not the final answer. It is an important tool to improve our response to the pandemic but has its own shortcomings. 100% efficacy is a myth. Restructuring available infrastructure is essential in pandemic situations. Proper procedure, counselling and choice in the way forward in this crisis. The “Swiss cheese” barrier is what is the state of affairs; along with multiple slices like social distancing, masks, hand hygiene the vaccine is another added layer of protection. Diligent and consistent use of all the above together can protect people properly from COVID-19 and its ever increasing mutations.

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