VI. Mobile Dispensary Seva: Helping Pune fight the pandemic

Bharatiya Jain Sanghatana

Abstract

The Bharatiya Jain Sanghatana (BJS) implemented COVID-19 mitigation programmes in Maharashtra, Karnataka, Tamil Nadu and Gujarat. During the challenging lockdown period, the BJS conducted free doorstep health checks for 22,56,045 citizens to identify COVID-19 suspect cases, and referred 2,25,724 cases to government hospitals for early testing. In the unlock phase, it conducted 3,46,809 rapid antigen tests and 41,614 RT-PCR tests free of cost for people in hotspots and containment zones. The organisation partnered with local governments, CSOs, industry and business partners, health workers and volunteers, contributing nearly 1,03,800 man-days of service to society.

BJS conducted an impact analysis of the Mobile Dispensary Seva implemented in collaboration with Pune Municipal Corporation in Pune and Pimpri-Chinchwad, then one of the largest COVID-19 hotspots in the country. The programme helped in reducing the average growth rate of cases from 37 percent to zero in Patil Estate slums, and from 40 percent to 6.3 percent in Yerwada slums; Patil Estate being the largest and Yerwada being the second largest COVID-19 hotspots in Pune. Overall, the analysis showed that aggressive screening, referrals and early detection of cases enabled early isolation, breaking the chain of virus transmission and lowering the number of deaths.

BJS and its COVID-19 response

The COVID-19 pandemic posed an unprecedented challenge for India in 2020. The nation went through a strict lockdown from 25 March, bringing life to a standstill. The impact of the pandemic was so severe and multi-dimensional that India needed everything in its capacity to fight economic, socio-cultural and health challenges. The debilitating impact on people's health necessitated immediate action to prevent larger adverse outcomes. It was in this context that the BJS decided to implement emergency COVID-19 mitigation programmes.

The programmes were implemented in a phased manner responding to emerging challenges as the pandemic progressed. These included Mobile Dispensary Seva, providing doorstep free health checks during the lockdown, followed by Mission Zero, which provided rapid antigen and RT-PCR tests in containment zones. While Corona Se Do Haath and Prachar Raths helped dispel myths and misconceptions regarding the virus, introduction of new technologies such as Smart Helmets used artificial intelligence to scale COVID-19 screening services in highly populated and most vulnerable areas such as slum settlements.

All programmes were implemented in collaboration with municipal corporations, social organisations and partners from industry and business, demonstrating their untiring efforts, and those of the deployed field teams comprising doctors, nurses, paramedics, health workers and volunteers.

Overall, the Mobile Dispensary Seva covered 48 locations across Maharashtra, Karnataka, Tamil Nadu and Gujarat between 1 April and 22 June 2020, using 223 mobile clinics. It provided free general health checks to 14,87,863 people and referred 19,972 suspected COVID-19 cases to municipal hospitals for early testing.

Mission Zero was implemented across 22 locations in Maharashtra, Karnataka and Tamil Nadu between 22 June and 31 October 2020, using 210 mobile clinics. It provided free health checks to 7,68,182 people, referred 2,05,752 suspected COVID-19 cases for testing, conducted 3,46,809 rapid antigen and 36,680 RT-PCR tests in hotspots and containment zones.

Together, both these programmes reached more than 22.5 lakh people with doorstep free health checks through a total of 416 mobile dispensaries, identifying and referring more than 2.25 lakh suspected COVID-19 cases for early testing at government hospitals between 1 April and 31 October 2020, when the entire country was under complete/partial lockdown.

These programmes have also conducted 3,46,809 rapid antigen and 41,614 RT-PCR tests in containment zones by physically visiting those areas to provide services. They helped to identify 34,707 COVID-19 positive cases (8.94 percent) out of the total number of people tested. By introducing *Smart Helmets* that use artificial intelligence for accelerated screening in high population density/high vulnerability areas, 3,33,189 people were screened and 2,785 suspected cases were referred to government hospitals for testing within 24 hours.

Figure 1: Mobile Dispensary on its way to service location; distributing free medication

Bharatiya Jain Sanghatana (BJS)

Mobile Dispensary Seva

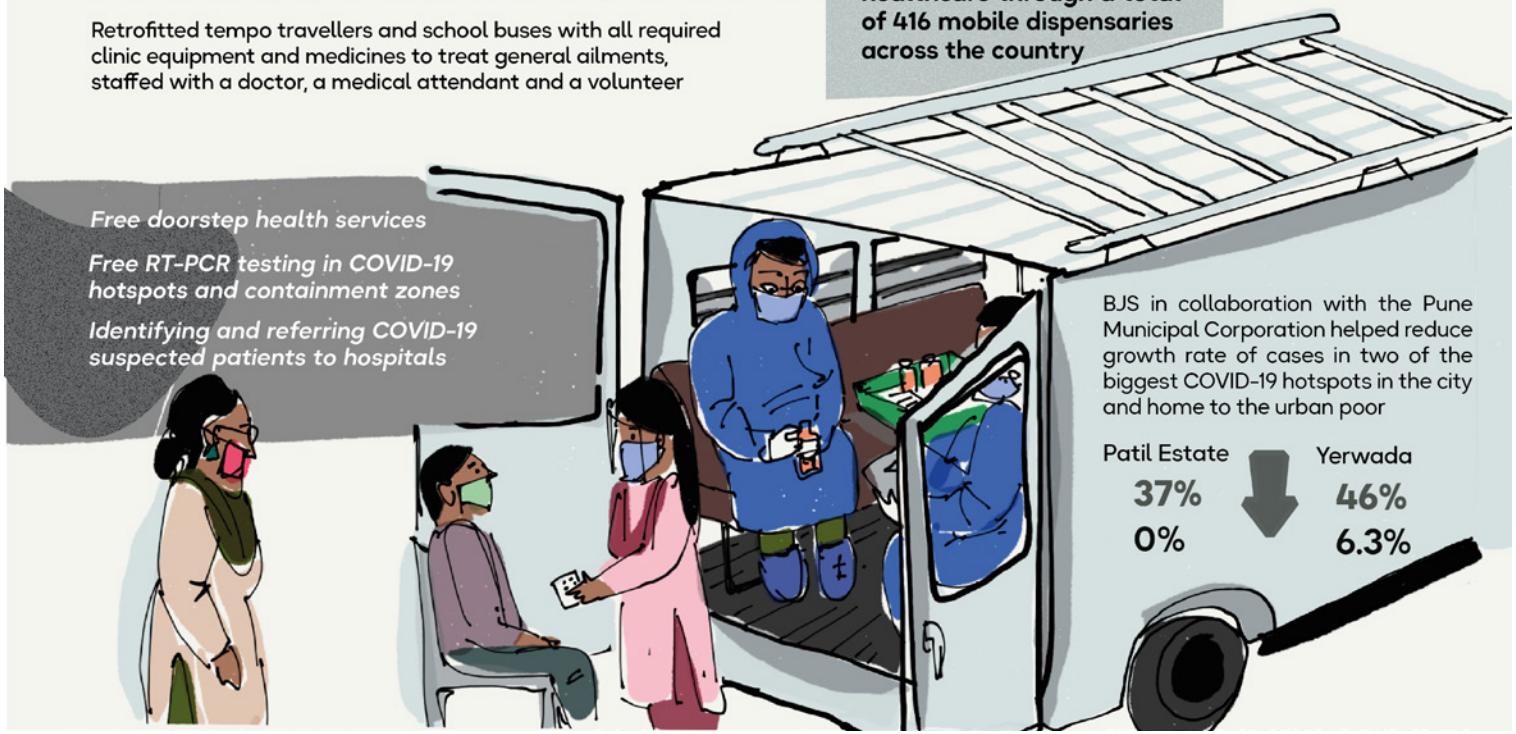
Retrofitted tempo travellers and school buses with all required clinic equipment and medicines to treat general ailments, staffed with a doctor, a medical attendant and a volunteer

Reaching more than 22.5 lakh people with doorstep healthcare through a total of 416 mobile dispensaries across the country

Free doorstep health services

Free RT-PCR testing in COVID-19 hotspots and containment zones

Identifying and referring COVID-19 suspected patients to hospitals



BJS in collaboration with the Pune Municipal Corporation helped reduce growth rate of cases in two of the biggest COVID-19 hotspots in the city and home to the urban poor

Patil Estate	Yerwada
37%	46%
0%	6.3%

Mobile Dispensary Seva in Pune

In March 2020, the Government of India declared COVID-19 as a national disaster. As the nation went into an unprecedented lockdown, almost all private hospitals and clinics were closed, resulting in severe restrictions for ordinary people to avail health services. Access to even basic healthcare became difficult. The increasing patient count in government hospitals led to a spike in the number of red-zones across the country. As the pandemic spread, misinformation and fear about the virus created panic.

A service like the Mobile Dispensary Seva was the need of the hour. Apart from providing free health services to the people at their doorstep, there was a need to identify and isolate suspected COVID-19 cases. The World Health Organization recommended that "health systems need to be able to detect, test, isolate and treat every case and trace every contact" in order to get disease transmission under control. In Pune city, slum settlements emerged as major hotspots.

As the lockdown exposed people to increased health risks, the Mobile Dispensary Seva provided a doctor at the doorstep of anyone who needed urgent health services. Vulnerable sections of the society like women, children, elderly and comorbid patients were given the much-needed healthcare support and medicines. As was its mandate, the programme also helped to identify COVID-19 suspected cases and ensured their immediate referrals to government hospitals.

Objectives

The Mobile Dispensary Seva, implemented in close collaboration with the Pune Municipal Corporation, had the following specific objectives:

- Provide free doorstep health services to needy patients during lockdown
- Identify suspected COVID-19 cases and refer them for testing within 24 hours
- Increase community awareness on prevention measures; dispel myths and misconceptions
- Assist the Pune Municipal Corporation to limit community spread of the virus

Figure 2: Health checks and screening services

Health check and testing coverage

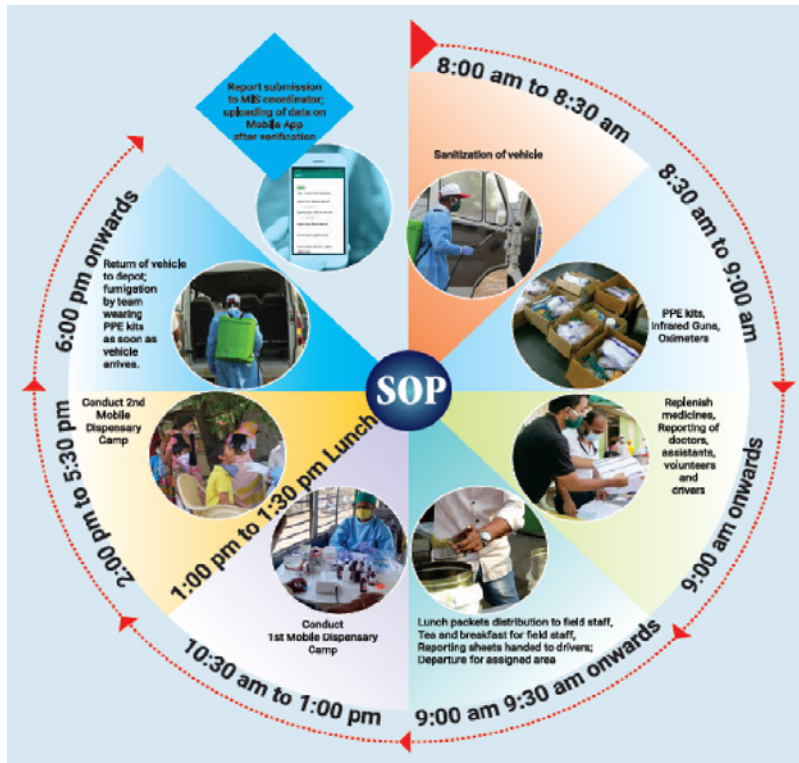
Following clearances from the highest political quarters in the state, the Mobile Dispensary Seva was launched in Pune on 1 April 2020 in collaboration with the Pune Municipal Corporation. Vehicles such as tempo travellers and school buses were retrofitted and converted into mobile dispensaries. They were staffed with a doctor, a medical attendant and a volunteer, and stocked with clinic equipment and medicines required to treat general ailments. Between 1 April and 13 June 2020, a total of 86 mobile dispensaries were used across Pune and Pimpri-Chinchwad municipal areas to conduct 7,04,421 health checks, referring 9,186 suspected COVID-19 cases to government hospitals. The programme covered 90.3 percent of COVID-19 screenings and 91.2 percent referrals for testing in the entire Pune and Pimpri-Chinchwad areas as of 8 June 2020. All staff of the dispensaries were provided with personal protection equipment (PPE) for their safety and all government norms for social distancing and COVID-19 safety were observed by doctors, assistants and volunteers.

Fleet operations

The large fleet of Mobile Dispensaries were operated with support from industry and business partners who pitched in with infrastructure for parking of vehicles, fumigation, disinfection and replenishment of clinic supplies. All mobile clinics were also provided with refreshments for staff, stationery and formats for case papers, MIS reports and other documentation.

Figure 3: Process – Mobile Dispensary Seva

Figure 4: Daily routine of mobile dispensaries



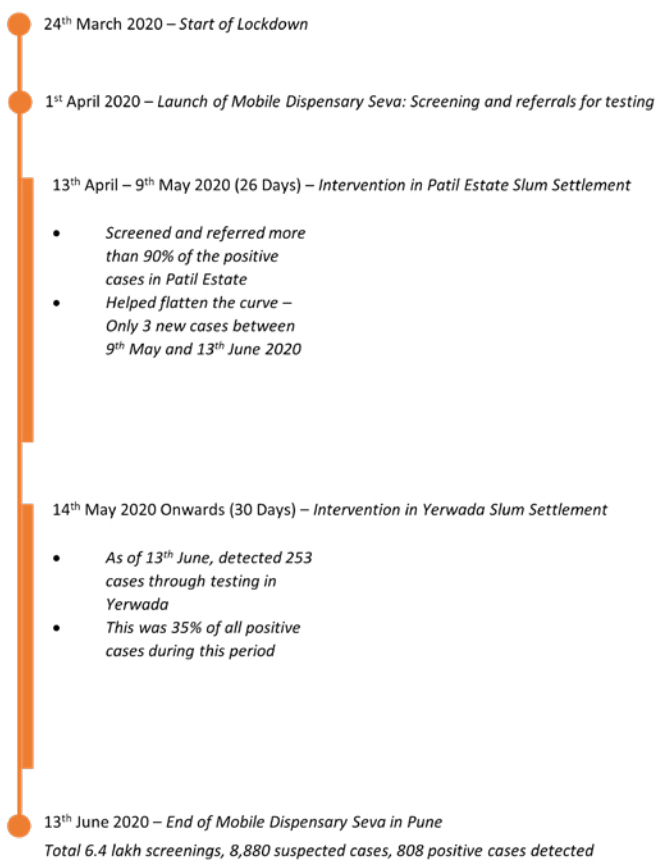
Impact analysis

A study was conducted to understand the grassroots pandemic response implemented by the Mobile Dispensary Seva in Pune, focusing on its processes for maximising coverage of COVID-19 screening in the city. The study sought to understand the impact of the programme by analysing data on screening, testing and detection of positive cases, specifically:

- What was the impact of early and aggressive screening, followed by testing and isolation on the number and prevalence of cases?
- What was the impact of these methods, especially in hotspots such as slum settlements?

Timeline of events

Figure 5: Timeline of events

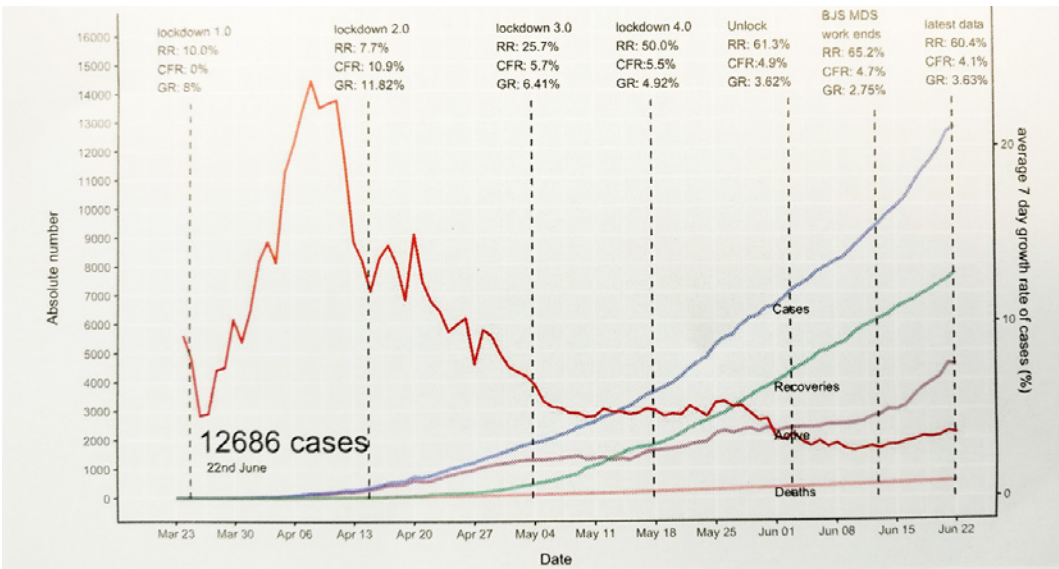


COVID-19 in Pune

Table 1: COVID-19 cases in the city

Date	Total Cases	Active	Recovered	Deaths	7-Day Growth Rate of Cases
25 March – Lockdown 1.0	20	18	2	0	8%
15 April – Lockdown 2.0	377	307	29	41	11.82%
4 May – Lockdown 3.0	1,878	1,288	483	107	6.41%
18 May – Lockdown 4.0	3,598	1,599	1,800	199	4.92%
3 June – Unlock 1.0	7,089	2,389	4,348	352	3.62%
13 June – Programme End	9,336	6,087	2,810	439	2.75%
22 June	12,686	4,496	7,672	518	3.63%

Figure 6: Number of active, recovered cases and deaths in Pune city as of 22 June (total 12,686 cases)



The 12,686 cases consist of 4,496 active cases, 7,672 recoveries and 518 deaths. The red line shows the 7-day average growth rate of cases. In the Figure above, RR refers to the Recovery Rate, CFR the Case Fatality Rate and GR the 7-day Growth Rate. The vertical lines show various phases of the lockdown and the end of the Mobile Dispensary Seva programme in Pune (13 June 2020).

Mobile dispensaries deployed in Pune conducted extensive door-to-door screening and identified COVID-19 positive cases in communities. All suspected cases were referred to the Pune Municipal Corporation for isolation and testing. Early identification and isolation of cases helped limit the spread of the virus, arresting community transmission to a large extent.

To understand the contributions made by mobile dispensaries in the overall COVID-19 response of Pune city, the reference date of 8 June 2020 was taken into consideration because on that date, the data for Pune city was available for the first time on the dashboard of the Pune Municipal Corporation COVID-19 war room. As on 8 June 2020, a total of 6.92 lakh people had been screened, 9,092 people referred and 484 were found to be COVID-19 positive. Out of this, the mobile dispensaries were responsible for 6.25 lakh screenings (90 percent) and 8,300 referrals (91 percent). As on this date, out of the total 2,938 doctors' trips in Pune city, 2,116 had doctors from the Mobile Dispensary Seva (71.3 percent) and 714 had doctors from the Pune Municipal Corporation (24.5 percent). The remaining 103 trips (3.4 percent) was through the Pune Cantonment Board.

Impact of early and extensive screening

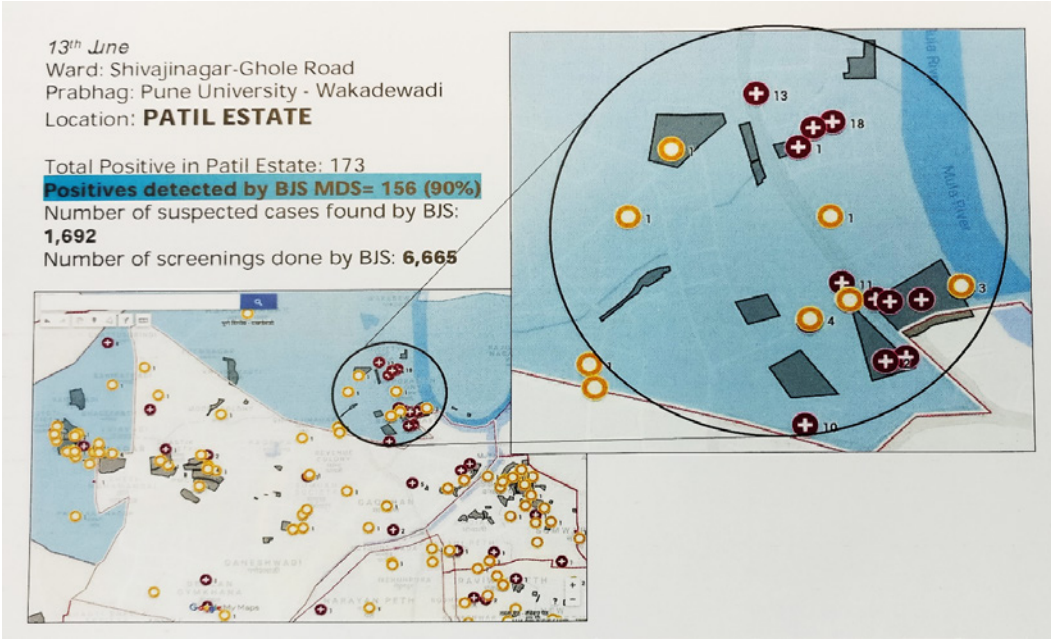
Early and aggressive screening, followed by testing and isolation, played a vital role in limiting the number of cases and the spread of the virus. In the absence of early detection, infection could spread unchecked, increasing the chances of death due to delayed treatment. Whether the intervention by the Mobile Dispensary Seva was effective or not in "breaking the chain" of virus transmission can be understood by tracking the number of cases in a selected location.

To analyse this, COVID-19 cases in wards with maximum positivity was considered. The first ward selected was Shivajinagar-Gole Road as it had 2,939 referrals out of which 274 were positive cases. Within this ward, the case study of Patil Estate slum settlement was selected due to:

- The highest number of screenings done and positive cases found
- The maximum cases at the beginning of the analysis
- The slum settlements where the control of the virus is tough

The Mobile Dispensary Seva was implemented in Patil Estate slums between 13 April and 9 May 2020. Figure 7 shows the spread of cases in Patil Estate. As can be seen from the map, several cases were detected in gullies and lanes of the slum that had highly congested living conditions and poor access to WASH infrastructure. The Mobile Dispensary Seva had reported 90 percent positive cases in this slum settlement.

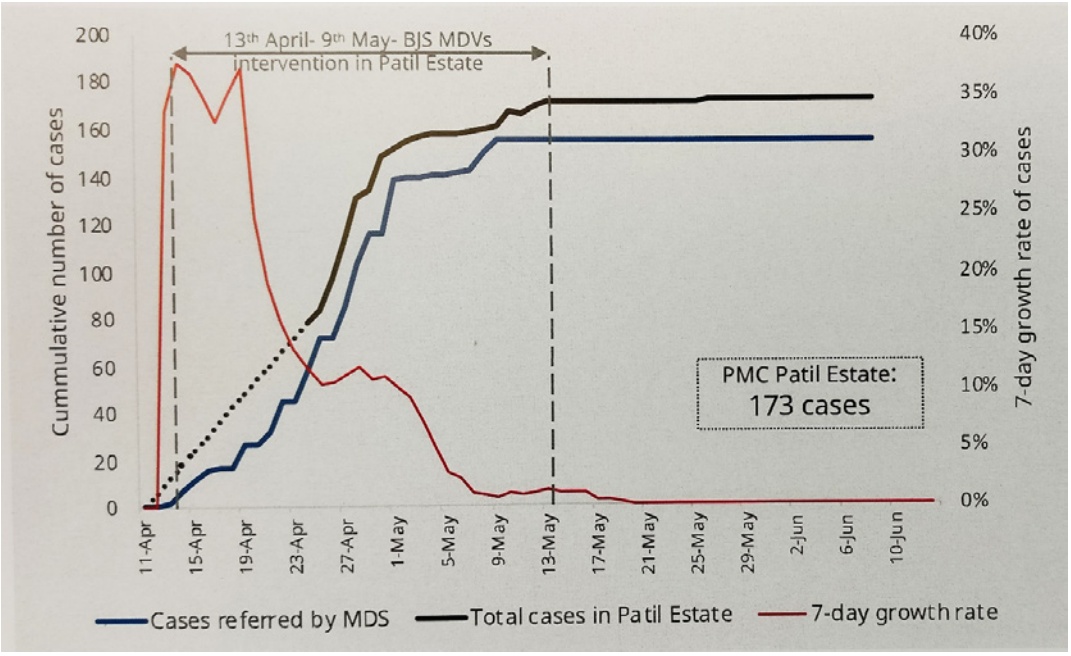
Figure 7: Analysis of intervention in Patil Estate slums



Observing the trend in Patil Estate slums

The black line in Figure 8 below shows the total number of cases in Patil Estate slums. The blue line shows the total number of patients referred by the Mobile Dispensary Seva who were detected as COVID-19 positive. The red line shows the seven-day average growth rate of cases. The chart shows that patients screened and referred by the Mobile Dispensary Seva formed more than 90 percent of the total positive cases from the area. It also shows that the number of cases flattened after 9 May 2020.

Figure 8: Trend of cases in Patil Estate slums



Data for Patil Estate not available from 11 to 23 April. Average values taken (dotted line).

Findings in Patil Estate

At the beginning of the pandemic, Patil Estate slum was one of the largest and fast-growing COVID-19 hotspots in Pune city, contributing to over 62 percent of the ward's cases. Figure 8 shows that new cases started reducing from the first week of May 2020. The average growth rate of cases reduced from 37 percent to zero, and Patil Estate slums flattened the curve. In the one month between 13 May and 13 June, just one new case was detected. The intervention was extremely effective in breaking the chain of transmission of the virus and limiting its spread. The Mobile Dispensary Seva helped flatten the curve in an area of the city that had one of the highest number of cases. The extensive and aggressive screening and referral method helped in early detection, isolation and testing of cases, breaking the chain of virus transmission.

Assessing testing data in Yerwada

In Yerwada, a total of 8,880 patients were referred by the Mobile Dispensary Seva after screening, of which 808 cases were detected as positive until 13 June 2020. Figure 9 shows that a large number (253) of cases reported were from the Yerwada-Kalas Dhanori Ward. As per the data provided by the Pune Municipal Corporation, Yerwada ward had the second highest number of cases in Pune, and within it, Yerwada Prabhag had the second highest number of cases. Hence, Yerwada was chosen for this analysis.

The Mobile Dispensary Seva did extensive interventions in Yerwada between 14 May and 13 June 2020. Figure 9 shows the distribution of cases (red points) within Yerwada Prabhag. As can be seen from the map, most of the testing was conducted in slum settlements in the Prabhag (grey polygons indicate slum settlements).

Figure 9: A large number of cases were from the Yerwada-Kalas Dhanori Ward

The map shows the spread of suspect and positive COVID-19 cases in Yerwada. Grey polygons show slums, red points show the location of positive cases and yellow points show suspected cases. Analysing the daily new cases detected in Yerwada, it was observed that 35 percent of the positive cases during the period 14 May to 13 June 2020 were detected through the Mobile Dispensary Seva. It was also seen that the growth rate of cases decreased during this period.

Observing the trend of daily positive cases in Yerwada

Figure 10 shows that 35 percent of the positive cases in Yerwada (between 15 May and 13 June 2020) were detected by the Mobile Dispensary Seva. It also shows that the growth rate of new cases detected has reduced from 42.6 percent at start to 6.36 percent on 13 June. The light blue area in Figure 10 shows the daily new positive cases in Yerwada. The dark blue area represents the daily new positive cases detected by the Mobile Dispensary Seva. The red line shows the five-day growth rate of cases (in secondary axis).

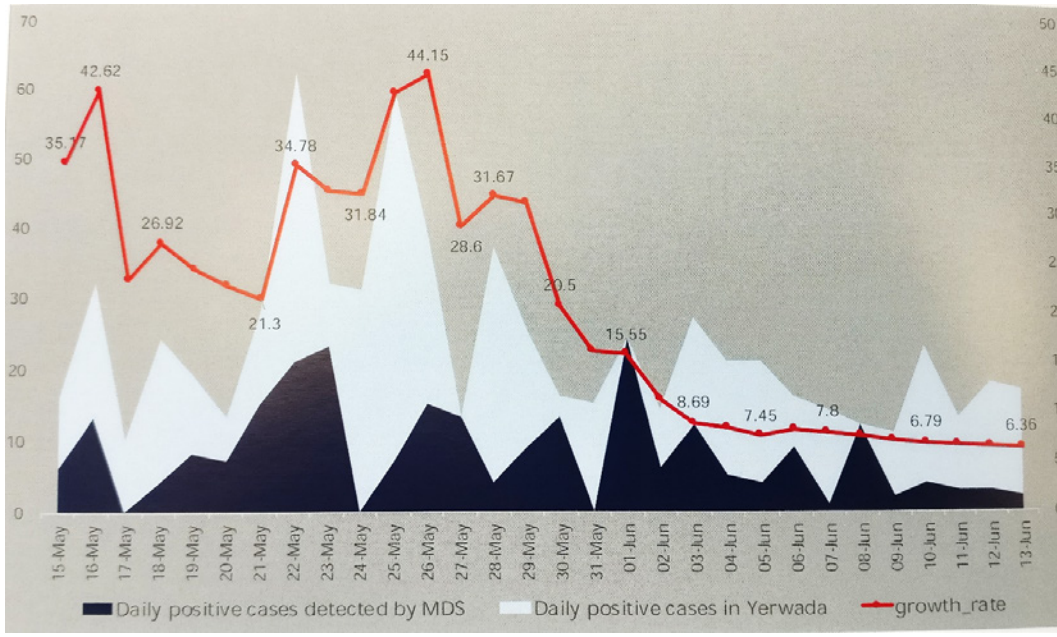
Findings in Yerwada

The growth rate of COVID-19 cases in Yerwada significantly reduced between 15 May and 13 June 2020. The importance of increased and targeted testing is particularly noticed in hotspot Wards like Yerwada. The data also show that:

- Yerwada had the second highest number of cases in Pune city (1,113 cases) and was growing fast at 40 percent during the start of the intervention
- The Mobile Dispensary Seva detected 35 percent of the positive cases in Yerwada during the period 15 May and 13 June 2020.
- The screening and referrals for testing provided by the Mobile Dispensary Seva were targeted towards slum settlements in *Prabhag* to ensure early identification of cases to reduce the transmission of virus.

- Two weeks after the Mobile Dispensary Seva began its intensive work in Yerwada, the number of daily new cases decreased. The five-day growth rate of cases too decreased from a high of over 40 percent at the start to 15 percent as on 1 June and to 6.36 percent as on 13 June 2020. The new positive cases in Yerwada had flattened over time.

Figure 10: Trend of daily positive cases in Yerwada



Early and extensive screening, referrals and early detection of positive cases through testing enabled early isolation, breaking the chain and lowering the number of deaths. Testing and detection of positive cases through the Mobile Dispensary Seva in Yerwada helped reduce the growth rate of cases and the ward showed early signs of flattening the curve.

Key learnings

The Mobile Dispensary Seva intervention in Pune's targeted locations had significantly aided the fight against COVID-19, specifically:

- Helping to detect 808 COVID-19 positive cases in early stages through aggressive screening of 6.4 lakh people, referring 8,880 suspected cases
- Contributed 90.3 percent of the screenings and 91.2 percent of the referrals in Pune city during the programme period, helping to detect 99.7 percent of the positive cases in the city
- The focus on highly populated slum clusters that emerged as largest hotspots in the city helped in early identification of maximum cases, helping to flatten the curve
- The programme helped in reducing the average growth rate of cases from 37 percent to zero in Patil Estate slums, and from 40 percent to 6.3 percent in Yerwada slums; Patil Estate being the largest and Yerwada being the second largest COVID-19 hotspots in the city
- The Case Fatality Ratio (CFR) of positive patients detected by the Mobile Dispensary Seva is considerably lower than the CFR of all positive patients in Pune city. This could be due to the focus on early detection of cases.
- Overall, the extensive screening and referral methods helped in early detection, isolation and breaking the chain of virus transmission. The early detection of positive cases helped to control the transmission, resulting in a reduced death ratio.

Challenges addressed

Even during the unprecedented and strict lockdown, the programme was able to leverage multiple sources for availability of doctors for the Mobile Dispensary Seva. Several doors were knocked to ensure adequate number of doctors to run the mobile dispensaries. Requests were made to Municipal Corporations, IMA, Indian Dental Doctors' Association, local corporators and influential personalities along with direct advertisements on television and WhatsApp, assuring safety of all participating doctors.

Encouraging citizens to avail Mobile Dispensary Seva for health checks was extremely challenging. Getting patients suspected of COVID-19 infection undergo swab tests within 24 hours of the health check was even more so. However, the exemplary work of the field team encouraging and convincing people to undergo swab tests within 24 hours succeeded and the programme could make a definitive impact.

Availability of everything – vehicles, PPE kits and volunteers, for instance – were additional challenges faced by the programme. Vehicles were sourced through personal contacts, referrals to ambulance services, school van providers and travel agencies. Drivers were assured of all the protection and facilities. PPE kits were initially procured by paying higher prices, and resources were generated by leveraging all possible and available sources, even including family/friends contacts of team members for procuring safety products. In the initial phase of the programme, the staff of Bharatiya Jain Sanghatana and its office bearers volunteered to run the Mobile Dispensary Seva, however,adequate number of volunteers were later provided by local corporators.

About Bharatiya Jain Sanghatana

BJS is a non-profit, non-government social impact organisation with a history of 35 years' exemplary work responding to issues of national importance, including disaster-response, education and social development. Founded by social entrepreneur Shantilal Gulabchand Muttha in 1985, BJS over the years has built a strong country-wide network of volunteers, and with its professional team and the state-of-the-art infrastructure situated in Pune, has demonstrated impact in the community by working at the grassroots and by also contributing to policy-level thought process and decision-making.

Muttha's philosophy has been the driving force of BJS. A keen strategist, he is strongly committed to working closely with stakeholders, and leveraging both technology and media for maximising reach and impact of programmes. His leadership vision established scale, speed and reach as USPs of the organisation. As a result, BJS demonstrates an exemplary track-record of implementing complex large-scale projects, speed of their execution, and reach to wide-spread and remote locations, bringing about a sustained impact in the community.

BJS's early work from 1985 that transformed into a mass movement has been instrumental in reducing the exorbitant marriage expenditures and freeing several religious communities from the shackles of undesirable social customs responsible for dowry deaths and female foeticide. This has notably been a sustained transformation in the communities.

BJS has always been in the forefront of relief and rescue efforts during major disasters since the Latur Earthquake of 1993. With its ability to mobilise strong teams of volunteers in any part of the country at short notice, BJS has created several sensitised task forces to undertake rescue, relief and rehabilitation work, making utmost efforts to ensure that the dignity of the affected people is respected. In addition to the Latur Earthquake of 1993, the Jabalpur Earthquake of 1997, the Gujarat Earthquake of 2001, the Akola Floods of 2002, the Tsunami in 2004, the Jammu & Kashmir Earthquake of 2005 and the Bihar Floods in 2008 were some of the major disasters where BJS was at the forefront of rescue, relief and rehabilitation operations.

BJS also realised the detrimental impact disasters have on surviving children. In the aftermath of the disaster, lack of physical and mental activity can make children relive the tragedy over and over again, translating into irreparable psychological damage. BJS recognised these symptoms as added dimensions to a disaster and promptly set to work with an action plan to ensure educational rehabilitation of disaster-affected children. Today, BJS has its own infrastructure at the Wagholi Education and Rehabilitation Centre (WERC) in Pune that offers residential education to disaster-affected children and children from marginalised sections of the society.

The ongoing efforts of BJS responding to the devastating COVID-19 pandemic in the country is only an extension of its disaster-relief mandate. BJS has partnered with various state governments and several municipal corporations to provide relief to common citizens in several parts of the country, be it through emergency doorstep free health checks, COVID-19 testing in hotspots and containment zones, mass awareness programmes disseminating authentic information on COVID-19 helping to dispel myths and misconceptions of people, managing Swab Centres and COVID-19 Care Centres, supporting municipal corporations in their implementation of COVID-19 vaccination programme, and most recently, responding to the emergency situation in the country due to the shortage of hospital beds and oxygen by providing O2 Concentrators to hospitals as a life-saving support.

End notes

1. Twitter handle of Mayor, Pune city Shri. Murlidhar Mohol https://twitter.com/mohol_murlidhar
2. All figures of the Mobile Dispensary Seva were taken until 8 June 2020 to enable comparison
3. Data from Mumbai show that 60 percent of people who die, die within four days of being diagnosed or identified because lack of oxygen had already severely affected internal organs. People detected early have a much higher chance of recovery
4. The Mobile Dispensary Seva screened 6,665 people, found 1,692 suspected cases and detected 156 out of the 173 (90 percent) positive cases in this locality
5. At one point, Patil Estate had 63.2 percent of the cases in Shivajinagar-Ghole Road Ward. The Ward had 133 cases on 25 April 2020 out of which 84 was from Patil Estate. 25 April was selected because it is the earliest observation available for Patil Estate slums
6. http://Source:%20Twitter%20handle%20@sidshirole/
7. Twitter handle of Mayor, Pune city Shri. Murlidhar Mohol https://twitter.com/mohol_murlidhar
8. Source: PMC – Yerwada Ward had 1,075 cases, second only to Dhole Patil Road – 1,706 cases. Yerwada Prabhag had 834 cases, second only to Tadiwala Road-Sassoon Hospital Prabhag – 1,168 cases