Response to COVID-19

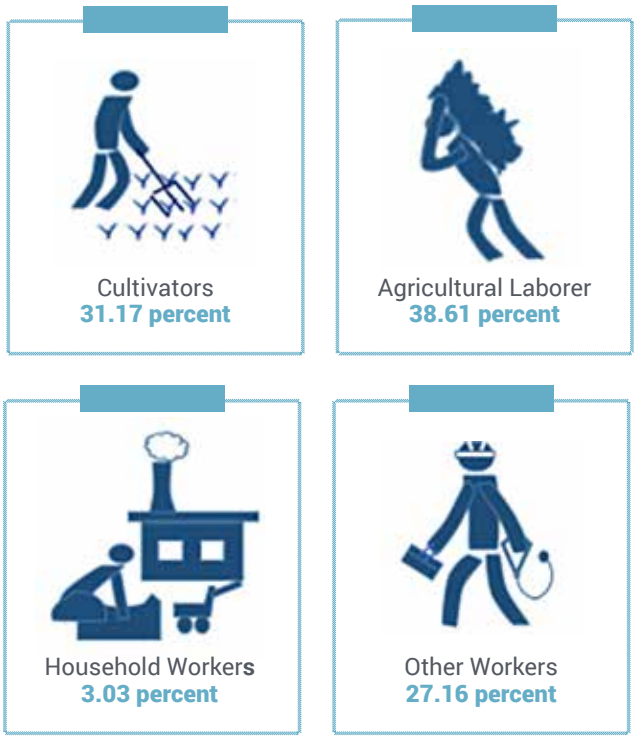
Madhya Pradesh

Identify, Isolate, Test and Treat : Response to COVID-19

Globally, COVID-19 has spread to about 200 countries and impacted everyone we know in some way, with over 14 million cases and more than 600,000 deaths across the globe till date[1]. India now has the third most cases in the world, after the United States and Brazil. While the government has taken stringent actions, including a nation-wide lockdown, it is also critical for each individual to follow necessary preventative protocols and take precautions, in order to break the chain of transmission. Governments at various levels in India have acted in varying ways to bolster individual efforts, given how COVID-19 has overwhelmed healthcare systems around the world and the challenge in front of India's healthcare systems to meet the needs of its population of 1.38 billion.

Numbers were a major challenge for the more heavily populated parts of the country. Madhya Pradesh (MP), a state located in central India, saw a rapid initial spread of COVID-19, which proceeded at an alarming rate across the congested areas of a few urban centers. Using a multi-pronged approach, it was able to contain the virus, and now has a positivity rate of 3.5; below the national average of 10 on 10th July, 2020[2].

Madhya Pradesh is the second largest state in India and the country's fifth most populous state, with a population that is a little smaller than that of Turkey. More than 70 percent of the population lives in rural areas, where agriculture is the main source of most of their livelihoods.



(Source: Azim Premji Foundation)

The IITT approach

The government of Madhya Pradesh adopted a four-pronged approach to tackle the pandemic, through strategy aiming at Identification, Isolation, Testing and Treatment (IITT). First, to identify coronavirus-affected areas, isolate them and test their residents, then to treat the patients if found positive.

- **Identification:** Identifying people with COVID-19-like symptoms, through contact tracing and surveillance
- **Isolation:** Isolating those who suspect they may have COVID-19 or have been exposed to the virus in quarantine and keeping the positives in isolation
- **Testing:** Testing all people who fit the Indian Council of Medical Research (ICMR) criteria free of cost
- **Treatment:** Appropriate treatment provided as per the symptoms

This strategy has proved to be an effective approach to combat COVID-19, as the state government planned and undertook targeted measures and interventions.

[1]As per the Johns Hopkins Coronavirus Resource Centre on July 20th,https://coronavirus.jhu.edu/
[2]https://www.indiamacroadvisors.com/page/category/economic-indicators/covid19-related/statewise-positive-rate/
[3]http://apfstatic.s3.ap-south-1.amazonaws.com/s3fspublic/Madhya%20Pradesh_Know%20About%20the%20State.pdf?i8VMT5dj5FDPJuvHLU7Ek1Bx4oBVZ0WE

Identification

In the absence of a proven drug or vaccine, non-pharmaceutical interventions have been the go-to strategy to ensure the containment and prevention of COVID-19. Timely identification of suspected cases/infected cases and potential clusters of affected people is pivotal in containment. Therefore, this has been foremost in the government of MP's response strategy. As part of the active screening process, 85 Rapid Response Teams (RRT) and 19 Special Response Teams (SRT) were formed and given the responsibilities of contact tracing and monitoring quarantine centers. The emerging hotspots, clusters and outbreak areas were identified through rigorous contact tracing and testing of all high risk first contacts. All passengers were screened at the point of entry; i.e. bus stands, railway stations, airports etc.

A defined mechanism as shown in the flowchart above was devised to ensure the synchronization of contact tracing efforts by healthcare teams, government medical college teams, and the police. Digital platforms were leveraged for close coordination between the teams. The strategy has enabled them to successfully conduct a contact tracing exercise for nearly all confirmed cases, taking samples for the tests of around 99.4% of first identified contacts.

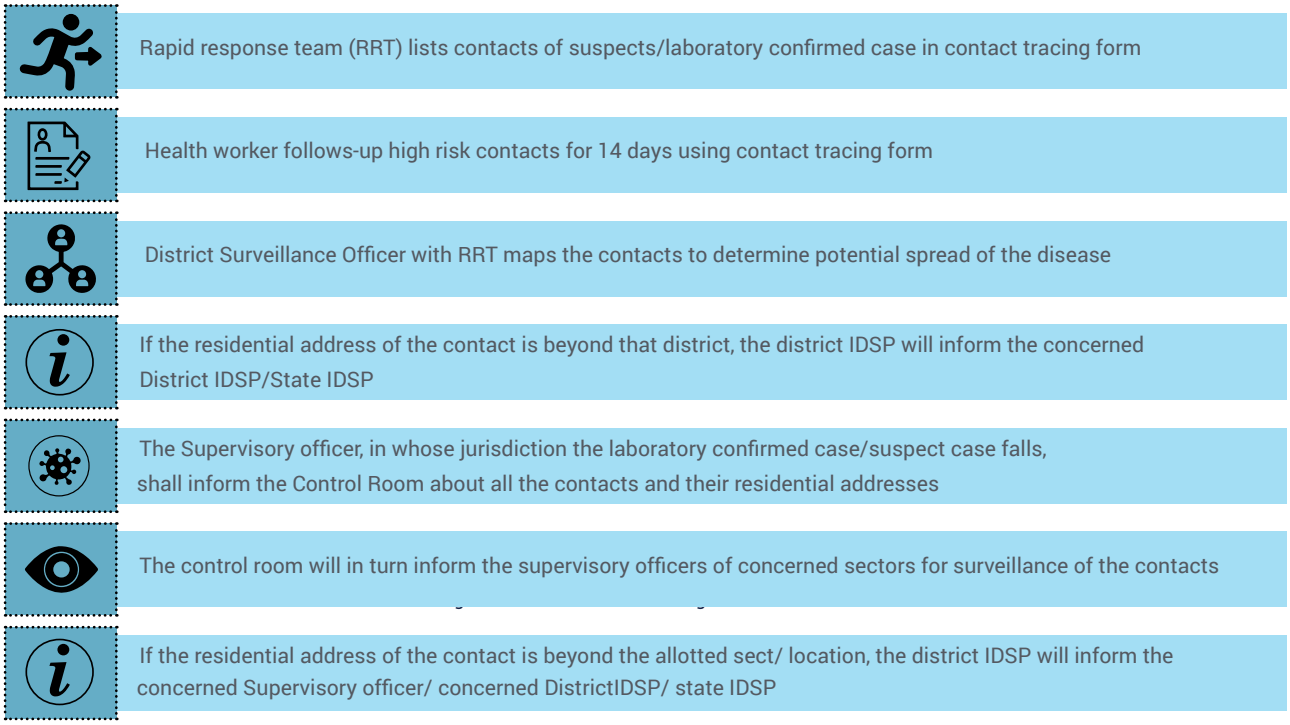


Figure 1: Mechanism for tracing of the contacts

For the active identification of COVID-19 suspects, the state leveraged technology and deployed an app named SARTHAK as the principal modality for both rigorous contact tracing and active surveillance, towards the identification of Severe Acute Respiratory Infections (SARI) or Influenza like Illness (ILI) cases by field teams. The app enables survey teams to capture the information of people being surveyed for SARI/ILI and to capture the first contact information of positives; then pushes this data to the concerned teams for sampling, allowing epidemiologists to confirm positives and push the data again on survey team's user credentials to close the loop.

Data flowing in from the app on the state's portal was subject to intensive analysis for early identification of potential hotspots, areas that require more intensive surveillance, gaps in contact tracing etc. The app has so far helped in surveying approximately 2.8 million people and identifying 99,556 first contacts in the state. It also helps

to identify people who have been referred to institutional quarantine by fever clinics and epidemiologists but did not get admitted.

Another strength was focused 'fever clinics' which were activated across the state as a potent modality for passive surveillance. These clinics were established as the first point of contact for the suspected COVID-19 patients, set up to address patients suffering from SARI or ILI.

Importantly, variations had to be taken into consideration: some sections of the population are weaker than others. Due to an altered immune system during pregnancies, the chances of complications due to COVID-19 are higher in pregnant women. Village Health Nutrition Days (VHNDs) are being organized regularly except in containment areas, for providing Antenatal care (ANC) services. Women who are health service providers and link workers were made aware of infection prevention practices like hand washing, the use of masks, and social distancing.

Isolation

Isolating the virus has been instrumental, in every state; every time caseloads rose, areas were cordoned off and marked as containment zones. In Madhya Pradesh, with the spread of contagion to all the districts despite rigorous monitoring and administrative control, the number of cumulative containment zones steadily rose. from 964 to 2,572 it grew nearly three times between early May and late June.

Measures were also identified to segregate those affected by the degree to which they were at risk. Importantly, three-tier facilities have been developed for the isolation of suspected/ confirmed COVID-19 cases.

These containment zones were planned with the purpose of mitigating spread of infection and curtailing the transmission chain with respective district administrations where COVID-19 positive cases were reported. Strict perimeter control was adhered to, limiting the entry of

COVID Care Center(CCC)

For pre-symptomatic/ very mild/ mild cases, with symptoms like fever, cough, sore throat etc.

Dedicated COVID Health Centre(DCHC)

For those requiring Oxygen therapy

Dedicated COVID Hospital(DCH)

For those requiring intensive care or ventilator management.

residents or visitors into the designated containment zones.

COVID warriors came in many forms. Residential areas were divided into sectors, with Accredited Social Health Activist (ASHA)/grassroots-level health workers each covering a maximum of 100 households (50 households in difficult areas). Supervisory cadres were directed to ensure appropriate logistics, and additional workforce members were mobilized from neighboring areas (except buffer zones) to cover all the households in the containment zone. The additional workforce was leveraged, using registered

volunteers from the government COVID warrior portal to put additional volunteers trained for surveillance into play.

Testing

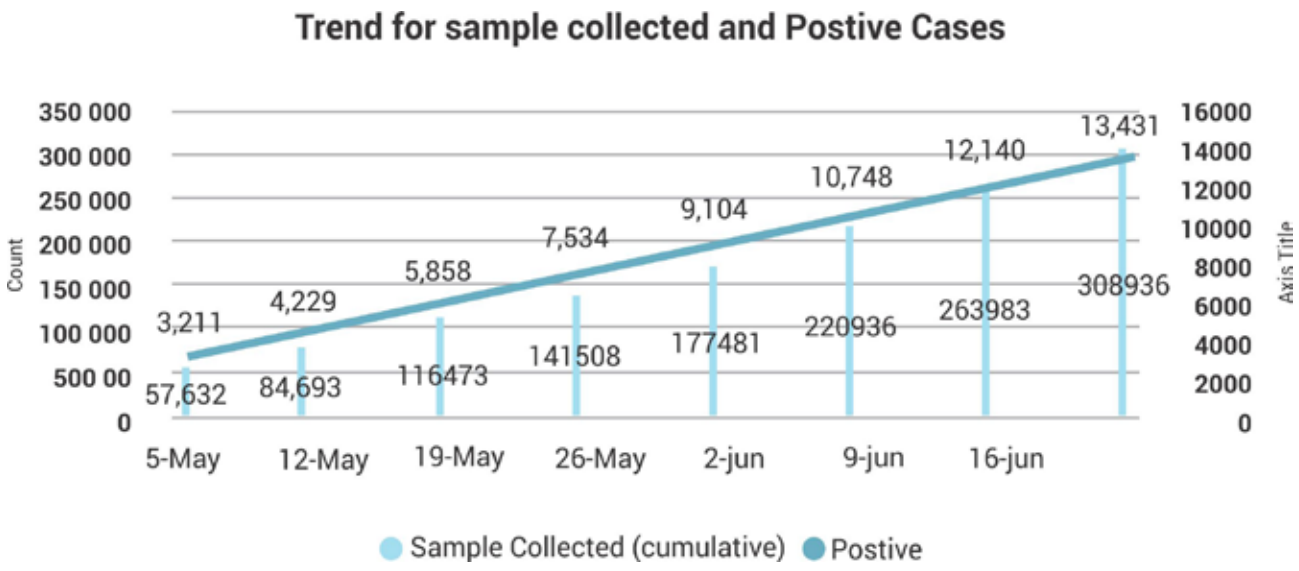
Being informed is being prepared, in the battle against COVID-19. The government of MP recognized that the imminent need of the hour was to stay ahead in the fight against COVID-19: by performing large number of tests. Keeping this in mind, the state ramped up its testing capacity in a big way, moving from a testing capacity of a mere 600 tests per day in April to 8,980 tests per day in mid-June. Tests per million people, consequently, moved up from a mere 40 tests per million in April to 4,004 tests per million in mid-June. The state went into door-to-door survey with a KILL CORONA campaign from July 1 to July 15, wherein every single household in the state was surveyed for possible SARI/ILI cases. The survey has been completed in 2.5 million households, covering 12.3 million in the state. The survey has identified close to 12,000 people with covid-19 type symptoms On 13 July, the campaign had conducted 0.12 million tests throughout the state[4].

Importantly, MP also managed to reduce the time taken to process results. For scenarios wherein sending samples to a laboratory within the state would take more time, both in terms of sending these as well as waiting for the results to arrive, the samples were sent outside the state to GOI laboratories in Delhi, Pune, Vishakhapatnam etc. In this way, the result availability time was reduced from 5-7 days to around 24 hours, which has been the constant aim for all results.

DATE	NO. OF TESTING LAB	OPTIMUM TESTING CAPACITY	TESTS DONE
23-Mar-2020	3	300	30
6-Apr-2020	6	600	598
20-Apr-2020	10	1,200	1,763
4-May-2020	14	2,600	2,909
18-Mat-2020	29	4,500	5,373
1-Jun-2020	44	6,010	6,190
15-Jun-2020	61	7,660	5,597
22-Jun-2020	78	8,980	6,210

Due to an increase in testing capacity, the number of samples being tested and being reported positive also increased over a period of time, as seen in the table given above.

[4]https://www.firstpost.com/india/kill-corona-campaign-in-mp-can-help-fight-covid-19-but-will-it-reverse-spike-in-bhopal-gwalior-chambal-belt-8627671.html
[5]ICMR issued guidelines time to time for testing and relevant standards based on each situation.



The samples collected increased from around 57,000 in the first week of May to more than 3 lakhs by mid-June. This has subsequently helped in identifying hotspots and isolating them, which significantly helped contain the spread of COVID-19.

Treatment

The capacity of infrastructure in India always contends with the sheer magnitude of population. On the treatment front, as per the Directorate of Health Services, Government of Madhya Pradesh, the state had huge shortfalls in the public sector in terms of the availability of beds: both oxygen-supported isolation beds and ICU beds. In the public sector, the state had a mere 2,428 isolation beds, 230 oxygen-supported beds and 537 ICU beds, as on April 1st. With a concerted effort, the capacity has now been increased to 23,610 isolation beds, 7,076 oxygen supported beds and 788 ICU beds in the public sector. Additionally, the state has entered into Service Provider Agreements (SPAs) with private hospitals and medical colleges and leveraged their infrastructure and services as Dedicated COVID Hospitals (DCHs). Accordingly, 1,848 oxygen-supported isolation beds and 317 ICUs from these private hospitals are now fully available for the state's COVID patients and people who are possible exposed to the virus.

Now, free-of-cost treatment is available to any COVID patient or suspect admitted at any of the existing public or contracted private hospitals in the state. This has ensured the identification of patients, thereby reducing the chances of further transmission.

Community-based Surveillance System

The state envisages a broader community engagement in surveillance activities. Accordingly, the state has devised community-based surveillance tools such as SARTHAK LITE, a citizen app, and COVID Rakshak, a system involving citizen volunteers who red-flag and report the persons who may have been exposed to the virus through community-based action, leveraging technology. SARTHAK LITE enables citizens to access real-time, accurate information pertaining to collection centers, fever clinics, CCCs, DCHCs and DCHs in their vicinity: all aspects concerning COVID-19 management. It enables them to report the persons who may have been exposed to the virus within their homes and communities to facilitate early action by local administration.

COVID Rakshak citizen volunteers are equipped with a fingertip pulse oximeter, supplied by the local administration after online registration on SARTHAK LITE. A COVID Rakshak uses the pulse oximeter to report citizens whose oxygen saturation levels may be less than 94% and thus are in need of immediate medical examination and care. With these tools, the state aims to broad-base surveillance, transforming it from a predominantly institutional use to a more community-based activity.

Outcome and the Way Forward

Sometimes, consistent effort and perseverance wins out. Madhya Pradesh's response to the COVID-19 pandemic has been, in essence, a success story. From the early days in April when its caseload contributed as much as 10% to the total caseload in the country and the state was battling a high positivity rate, poor testing capacity and strained infrastructure, the state has come a long way. MP now contributes only about 2.8% to the total case load in the country.

Importantly, the 'I-I-T-T' strategy not only enabled rapid control over the spread of the pandemic in the state but also helped to further strengthen public healthcare by making people more aware of the importance of good health and hygiene and making healthcare more accessible to public.

While efforts are clearly on the right track, the administration needs to remain watchful to contain further spread of the virus.

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