

UTILIZING DIGITAL TECHNOLOGY FOR COVID-19 RESPONSE AND ENSURING ACCESS TO ESSENTIAL HEALTH SERVICES IN RAJASTHAN, INDIA

COVID-19 PROMISING PRACTICES

EXECUTIVE SUMMARY

- Rajasthan, the largest state in India by area, is in the process of strengthening its primary health care system, especially for mothers and children. Specifically the state is prioritizing digital enablement of the health workforce to ensure longitudinal community based health tracking and efficient resource deployment.
- The first local case of COVID-19 in the state was documented in March 2020, which led to innovations for both the COVID-19 response and maintenance of essential primary health services.
- The state adopted digital technology innovations for crisis communication and monitoring and management of COVID-19 cases and other primary health concerns.
- As cases rose, a unique project known as Mission LiSa (Life-Saving) was established to protect vulnerable populations from COVID-19 and non-COVID-19 concerns.
- ASHAs, local village level community health workers, have played a significant role in active surveillance, health awareness and follow up care for COVID-19 and all national health programs.
- As of July 1, Rajasthan has had over 18,000 confirmed COVID-19 cases and the highest recovery rate in the country at 79.6%.

RAJASTHAN PHC AT A GLANCE



Population: 77.26 M
GDP/Capita: \$1,564 (current USD)
Human Development Index: 0.434
Life Expectancy at Birth: 67.7 Years

- India spends 1.28% of GDP on healthcare and constitutes health as a state subject. The country has adopted a mixed public-private system.
- In Rajasthan, rural primary healthcare is organized as a three-tier system spanning across the Anganwadi Center, Sub-Center, and Primary Health Center.
- Primary health care begins at the ground level with the Anganwadi Center which is dedicated to holistic child development and nutrition. The Sub-Center caters to around 3000-5000 citizens and primarily covers maternal, child and adolescent health services. The Primary Health Centre provides basic diagnostic and treatment services for all national health programs to 30,000 to 50,000 citizens. Meanwhile, secondary care and tertiary care are provided by the community health center and public hospitals, respectively.
- Rajasthan provides 719 free medicines under the Mukhyamantri Nishulk Dava Yojana and free basic diagnostic tests under the Mukhyamantri Nishulk Jaanch Yojana. The state has also adopted the National Ayushman Bharat public health insurance scheme in 551 public and 1,498 private hospitals.

COVID-19 IN RAJASTHAN



As of 07 Jul 2020

20,688

TOTAL CONFIRMED CASES

16,278

RECOVERIES

461

DEATHS



In March, Rajasthan opted for a state-wide lockdown and a ban on interstate as well as interdistrict travel. After which, aggressive testing, contact tracing and quarantine measures were adopted. These strategies were especially successful in controlling the spread of COVID-19 in hotspot areas where citizens abided by social distancing norms.

As cases began rising, Rajasthan launched Mission LiSa - a coordinated effort for following-up with the health of vulnerable groups (infants, pregnant women, those with chronic diseases, and the elderly) in medically and socially high risk geographical areas across the state. To address the outbreak at scale, the Department of Health has taken an IT-enabled response, activating a WhatsApp Chatbot and automated IVRS voice calls to disseminate information and follow up with COVID-19 cases, reproductive child health care and chronic disease management. WhatsApp, along with video-conferencing, has also been used extensively to coordinate the Department's response from state to village level. Finally, the duties of the health workforce have been IT-enabled, ensuring accountable, timely reporting and data for action.

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COVID-19 RAJASTHAN:

THE ROLE OF DIGITAL TECHNOLOGY IN COVID-19 RESPONSE AND MAINTAINING ACCESS TO ROUTINE AND ESSENTIAL HEALTH SERVICES

AN INTERVIEW WITH MR. ROHIT KUMAR SINGH

Mr. Rohit Kumar Singh, IAS, is the outgoing Additional Chief Secretary, Medical, Health and Family Welfare, Government of Rajasthan and now ACS Home and Transport. Previously, he was the Chairman and Managing Director of Jaipur Metro Rail Corporation. Mr. Rohit Kumar Singh has also served as a member of Finance, NHAI and Joint Secretary in the Ministry of Road Transport and Highways, Government of India. We interviewed Mr. Kumar to learn about his experience leading the COVID-19 response in Rajasthan, India - specifically the adoption of technology for active surveillance and crisis communication. Also in the interview were Ruchit Nagar and Mohammed Shahnawaz from Khushi Baby. Responses have been edited for length and clarity.

Question: What have been some of the biggest challenges have you experienced in addressing COVID-19?

Answer: Rajasthan is the largest state in India, home to over 70 million citizens. The sheer vastness and population density of the state presents a challenge to managing health security threats. Since 75% of our population is rural, it has been difficult to not only track disease spread but also to share health awareness and state-specific guidelines. Screening, testing, contact tracing and quarantining have been especially difficult in low literacy, socio-demographically challenging areas. Further, the current data collection system is paper-based and communication is established as a hierarchy, from the block to the district to the state. This data is shared via excel sheets, so it was initially difficult to get information in real-time and take action in a timely manner.

Other challenges include reduced access and utilization of primary and specialty care. This has occurred due to a multitude of factors. Firstly, frontline staff who are responsible for rural health awareness and service delivery have been occupied by COVID-19 active surveillance. Secondly, primary health care services have been either modified, reduced, or suspended to ensure social distancing. For example, maternal child health nutrition camps in rural Rajasthan were suspended for two months. Lastly, utilization of available services has reduced because citizens are avoiding health care facilities due to fear of catching COVID-19. This gap in primary health care has been especially evident for health awareness, reproductive child health and chronic disease management.

Question: What have been some of the ways Rajasthan has addressed COVID-19 and related challenges?

Answer: In the initial stages of the outbreak, the state ordered a lockdown and adopted a “ruthless containment” strategy to break the chain of transmission in hotspot areas. This model, first applied in the District of Bhilwara, gained national acclaim for successfully stemming the spread of the virus. The model included empowerment of local administrators, aggressive contact tracing and testing, strict home quarantine, and delivery of essentials to households. Further, to overcome socio-demographic barriers and build trust with communities, local religious and political leaders were contacted to advocate for social distancing, active surveillance and facility quarantine.

Two months into Rajasthan’s COVID-19 response, the Department of Medical, Health and Family Welfare (DMHFW) began an initiative called Mission LiSa (Life-Saving), to protect the most vulnerable (children < 10 years, pregnant women, comorbid, elderly > 60 years). Saving lives requires balancing our resources against fighting COVID-19 and ensuring uninterrupted primary health care delivery.

To save lives, both now and in the future, this pandemic must be taken as an opportunity to strengthen health infrastructure, crisis communication platforms and human resources. Most importantly, leveraging digital health technologies has increased efficiency in resource allocation, ensuring that a zero-sum approach is not taken while addressing both COVID-19 and primary health care at large.

Question: How was digital technology utilized to balance the response to COVID-19 and primary health care gaps in Rajasthan?

Answer: As Additional Chief Secretary (ACS), Health, my top priority has been digital enablement of our healthcare infrastructure. I view digitization as a four-step process: 1) defining precise indicators, 2) accountable data collection, 3) data processing, and 4) data-informed intervention. Early efforts towards this goal prepared the DMHFW and the frontline workforce to adopt technology as means to both collect data and take action at scale, during COVID-19.

Since the beginning of the pandemic, along with developmental and departmental partners such as UNICEF, WHO and Khushi Baby, the state has developed policy guidelines, mobile applications, automated voice calls and chat bots for both citizens and health workers. These tools serve as platforms for active surveillance and crisis communication, which ultimately informs the public health response. These solutions ensure reliable, real-time and streamlined field data collection to track disease spread and identify high risk populations. This data not only helps us address COVID-19, but also guides allocation of resources to fill primary health care gaps.

Question: Can you describe some of these technology platforms and how they function to address primary health care during COVID-19?

Answer: Our technology platforms maintain primary health care service delivery by connecting the beneficiary with both information and services.

For Mission LiSa, Khushi Baby developed an active surveillance mobile application for health workers to screen and follow-up with vulnerable populations. Through the app, we capture GPS data, demographic information, symptoms and pre-existing conditions, medication availability, sample collections, referrals, vitals and contact history. The data is then processed using artificial intelligence and advanced geographic information system techniques to predict health outcomes, behaviors and emerging hotspots. This initiative ensures that the government knows who needs care and where they are located, so that adequate COVID-19 and non-COVID-19 related services can be provided. For

example, this process informs deployment of mobile medical vans for primary health care delivery.

Significant efforts have also been made to open up multiple channels for self-reporting. Since WhatsApp is the most widely used application in the state, we launched a WhatsApp chatbot. The bot shares updated state health guidelines with citizens and health workers and connects users with our telemedicine service platform called E-Sanjeevani. This bot also serves as a medium to report COVID-19 symptoms, pregnancy status, pre-existing conditions and resource requirements. After which, the DMHFW can follow up and test symptomatic citizens, create safe delivery plans with pregnant women, and provide medications and care to the vulnerable. Since its launch, around 200,000 messages have been exchanged via the bot. Finally, on the citizen facing end, the Department of IT has launched RajCOVIDInfo, a mobile application to self-report daily symptoms and view COVID-19 state-specific information.

A recent, but notable development to our crisis communication platform is automated, dialect specific voice calls to fulfill the role of frontline staff, currently engaged in COVID-19 related activities. Our one-way outbound calls, which include health awareness information and reminders, are sent in a targeted manner to beneficiaries, especially mothers and children. Specifically, we share information about good health behaviors and reminders about when to attend maternal child nutrition camps, where nutritional supplements, immunizations and antenatal care are provided. This system, designed and evaluated by Khushi Baby in a 3 year, 3000 mother randomized control trial in Udaipur, Rajasthan, was shown to increase full immunization rates by 12 percentage points and decrease infant malnutrition rates by 4 percentage points.

Our two-way, IVRS calls, will be sent to pregnant women and new mothers to guide them to self-identify high risk pregnancy and neonatal signs. Those beneficiaries who report as high risk are advised to seek care. Later, they are contacted by our newly established maternal child health call center to ensure they are in touch with their local frontline nurse or have received care at the health center. In the next month we will reach 600,000 mothers and children with our voice call system.

The IVRS calls will also be used to follow up with citizens captured through Mission-LiSa and WhatsApp chatbot surveillance systems. Our current COVID-19 call centers serve as a helpline for these citizens.

Question: How did digital technology play a role in improving administrative communication for coordination of Rajasthan's COVID-19 response?

Answer: Beyond usual forms of communication, WhatsApp has played a significant role in facilitating administrative communication. During a busy day of meetings, administrators can instantly view updates, reply, and send out orders directly from their smartphones. They can also make calls and video chat with State Nodal Officers and District Collectors using the same platform. Administrators may receive up to 1000 messages a day and may be members of over 100 groups, but WhatsApp's ease of use makes communication seamless. The speed at which information travels through WhatsApp forwarding mechanisms is incredible. Often, a notice sent out at 2pm is received and read by almost every individual in the administrative network within 2-3 hours. During COVID-19, WhatsApp has served as an all in one tool for timely reporting and coordination.

Sometimes, administrators even get WhatsApp calls from left out, distressed citizens who require essentials or are struggling to return home to their families. Citizens are requested to send their specific problem as WhatsApp messages, which are forwarded to District War Rooms. In a matter of day, these people are followed up with and taken care of.

These past few months, WhatsApp has been extensively used to share COVID-19 related news and health awareness. I have established a WhatsApp group dedicated to identifying information being widely circulated on WhatsApp. On witnessing fake news, my team invalidates it through a disclaimer, which is forwarded via the platform. Recently, the Department of Medical, Health and Family Welfare (DMHFW) has created a verified WhatsApp account, linked with a 24*7 Social Media Cell. In this way, we can share trusted awareness material and state-specific updates through our WhatsApp chatbot.

Beyond WhatsApp, the Department has extensively ramped up use of video-conferencing. Previously, as Secretary of IT, I established Sec-Lan, a private IP network for the Rajasthan Government. Today, Rajasthan's BioScope video-conferencing solution runs on Sec-Lan fiber-optic connections to all 250 blocks across the state. This VC network has been used for dissemination of treatment and testing guidelines, training of health workers, and engagement with local religious and political leaders.

Question: What lessons have you learned in addressing COVID-19?

Answer: India has yet to make significant progress in using technology to improve the quality of primary health care, especially in last mile settings. COVID-19 has given us the opportunity to use technology to not only collect data, but deliver informed care and strengthen our workforce. For example, our Mission Lisa application will transition into a tool to conduct India's first state-wide digital health census for 50 million+ citizens. The quality and completeness of the data from the census will be used to establish a true denominator, transforming the state's current and future primary health care preparedness.

Finally, COVID-19 has brought to attention the vulnerabilities of certain populations. Moving forward, we must build the capacity of not only technology solutions, but also our frontline workforce to keep these populations at the forefront of care.

Question: Where do you see opportunities for longer term health systems strengthening?

Answer: For India, in particular, investing our resources into the ASHA's educational, financial and technological empowerment will be key to addressing future pandemics and health security threats. The ASHA is the primary link to rural India. She is a social health activist and is elected by her village. She is responsible for spreading awareness, screening and following up with citizens across all national programs including non-communicable disease, TB and reproductive child health. Currently, one million ASHAs serve over 845 million citizens in India.

For Rajasthan, the priority is to facilitate ownership of a smartphone for over 50,000 ASHAs. We have developed a mobile application for her to follow up with community-based treatment and prevention, administer a digital health census of her village, and view her estimated monthly earnings. The solution is designed to collect accountable, high quality, actionable health data on every citizen across the state. The census will set a true denominator for our public health system, so that we can procure and deploy resources effectively. We are also developing mobile applications for frontline nurses and medical officers which will communicate with the ASHA application to deliver longitudinal primary health care.

Strengthening hospital infrastructure through increase of PCR and ICU capacity, and establishing an integrated hospital management system has also been at the center of Rajasthan's fight against COVID-19.

This article was written by:

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Left to Right: ACS Rohit Kumar Singh, Ruchit Nagar, Saachi Dalal, Mohammed Shahnawaz

RELEVANT RESOURCES



RELEVANT IMPROVEMENT STRATEGIES

- [Primary Health Care Policies](#)
- [Quality Management Infrastructure](#)
- [Information Systems](#) and [Information Systems Use](#)
- [Workforce, Funds, and Safety](#)
- [Population Health Management](#)

GLOBAL LEARNING TOOLS AND RESOURCES

- WHO Resources
 - [COVID-19 Operational guidance for maintaining essential services during an outbreak](#)
 - [Telemedicine: Opportunities and Developments in Member States](#)
- [Knowledge Action Portal - Digital Health](#)
- [PATH Resources to support COVID-19 in LMICs](#)