COVID-19 IN
RURAL INDIA

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How quickly is COVID-19 expected to spread in rural India? What does the epidemic mean for education in rural areas? How do we empower ASHA workers in our fight against the epidemic? What are some of the unique challenges and opportunities that rural areas present with respect to community and public health initiatives?

We have all experienced huge changes in our lives as a consequence of the COVID-19 pandemic. Who would have thought that a tiny virion, approximately 120 nanometers (a hydrogen atom is 0.1 nm) in diameter would bring the whole world to its knees in just a few months? By the second week of September 2020, more than 28 million people have been reported to be infected worldwide, and a little less than a million have died. In our own country, more than 4 million people have been reported to be infected, and more than 75,000 people have died. These numbers represent the tip of the iceberg. The actual number of infected persons may be five times larger. The pandemic has also unleashed devastating economic and social upheaval.

Brought in by international travelers, the infection was initially concentrated in cities with international airports and dense populations. But it has now spread into rural areas. From the middle of May 2020, a third of the patients in Andhra Pradesh and 80% of the positive cases in Odisha were from the rural areas. 70% of cases in Bihar were in migrant workers. The spike in cases in the rural areas is not yet as big as that in the Metro cities, but it is certainly increasing. About 66% of our population lives in rural India, and it has been estimated that 25% of the total infections by the end of July 2020 are likely to be in our rural population.

According to the census of India 2011, more than 450 million Indians (or 37% of our population) are internal migrants

who move away from their homes in search of a living. The nationwide lockdown instituted to control the spread of infection resulted in a sudden loss of income for these **guest workers** in big cities. The mass migration of about 25 million guest workers, forced by circumstances of the lockdown to head back home from the cities, may have fueled the rapid rise in rural infections. Poor health care resources in our rural areas will make testing, isolating patients, and quarantining their contacts with COVID-19 challenging.

Before we explore options for responding to this challenge, let us look at some inspiring examples of appropriate responses to crisis and disaster.

Learning from responses to crisis and disaster

The first example is that of Odisha's response to cyclones. In 1999, a super-cyclone ravaged Odisha and close to 10,000 people died. Last year, cyclone Fani affected 16.5 million people in Odisha, but less than 50 lives were lost. How did this transformation occur? The state government set up its own disaster management system as an autonomous body to combat emergencies. It developed appropriate technology to send 18 million SMS messages to prepare citizens with rules to follow during the cyclone Fani. It mobilized the local administration, police, and volunteers to go from house to house, and evacuate 1.8 million people to the more than 9000 shelters that had been prepared. What an amazing transformation in 20 years!

The second example is that of Kerala's response to the epidemic. The first positive case of COVID-19 in our country was reported from Kerala in January 2020. Since then, in a state with 35 million people, as of the second week of September, there have been a lakh cases, 440 deaths, and a recovery rate of 71.7%. The state's remarkable success is attributed to learnings from their earlier experience of the Kerala floods in 2018, and the Nipah virus outbreak in 2019. This enabled the state government to quickly deploy resources, and put up a timely and comprehensive response to COVID-19 in collaboration with key stakeholders. For example, this involved setting-up district control rooms for surveillance, monitoring, widespread communication of risk and safe practices, identification and isolation of infected persons, contact tracing and quarantine. It also included the design of measures to address physical and psychosocial needs of vulnerable populations. This strategy worked because of the state's long-term emphasis on education for women, systematic investment in strengthening health infrastructure and capacity building of frontline health workers, and strong community engagement.

The third example is that of Japan's response to the epidemic. Japan is a crowded country, with a large population of about 126 million people and a high proportion of elderly people (25.9% above the age of 65 years). As of the second week of September 2020, they have reported only 74,544 COVID-19 cases and 1423 deaths. What is interesting is that they have succeeded in limiting their numbers **without** following the WHO's dictum of test, test, test, and without a strictly enforced lockdown or closed borders. What they did do is to encourage people to avoid the three 'C's: closed spaces with poor ventilation, crowded places with many people, and close contact such as face-to-face conversations. Japan used a cluster-based approach to testing, testing clusters of rapidly spreading infection, rather than testing the whole population. The Japanese government declared a national emergency, but allowed some economic activities, like in factories, to continue. They did not order people to stay at home, wear masks, or wash their hands. But, by and large, that is what most Japanese people did.

How can learnings from these and other such examples help us address the anticipated increase in COVID-19 cases in our rural areas?

Responding to rising COVID-19 cases in rural areas

It is now established that physical distancing, wearing masks, washing hands, and avoiding the three Cs are important elements in preventing the spread of the virus. The use of masks becomes critical wherever congestion (within homes, in market places, or while using public transport) makes it difficult to practice physical distancing. Multilayered homemade cloth masks protect the wearer from catching the infection from others, while also preventing them (even as asymptomatic carriers) from spreading the infection to others. It is important that the mask fits well, and covers the nose and mouth adequately.

It is very important to protect the elderly (> 65 years old), and those suffering from chronic diseases (like asthma, diabetes, hypertension, heart failure, or cancer) from infection. This can be achieved by cocooning or reverse quarantining them in their homes. What does this mean? Normally, people with an infectious disease are isolated, and their close contacts quarantined to prevent spread of the illness. In contrast, a reverse quarantine approach quarantines uninfected but vulnerable people to protect them from contact with infected people. Each community will need to provide quarantined people with physical support (by supplying provisions like rations, water, food, or medicines) as well as psychosocial support (to prevent depression from the prolonged isolation).

Social occasions like birthdays, weddings, funerals, as well as collective worship in temples, mosques, and churches will need to be postponed, avoided, or curtailed in such a way that only the fewest people attend. Physical contact among even those who attend needs to be minimized by ensuring staggered timings and 2 m (or 6 feet) physical distancing. Large gatherings in movie theatres, public meetings and rallies, or festivals, *melas,* and *thiruvizas*

need to be avoided altogether. Essential services like hospitals and clinics will need to move their waiting spaces outdoors, to well-ventilated shelters or under the shade of a tree, rather than in a crowded, closed, indoor space. Wherever possible, medical and pharmacy services will need to be provided at the patients' doorstep.

Since March, schools and colleges have shut down completely. Some teachers are borrowing amplifiers and loudspeakers to take their classes outdoors, under trees, with their pupils spread out to ensure 2 m distance between any two of them. Other teachers are using smart phones for online classes in towns where computers are not available. Access to this form of learning can be improved by subsidizing broadband charges in rural areas, and providing second-hand smart phones to students' families. Other options that are being explored for local connectivity include educational television programmes and community radio programmes. Rajasthan's 'Apno Radio' as well as Maharashtra's 'Vidyavani' and 'Vasundhara Vahini' are good examples of the latter. Where even this is not available, older children can be encouraged to teach their younger siblings in an 'each one, teach one' manner so that learning is not interrupted. These methods can also be used to spread the message that keeping physical distance, wearing masks, washing hands, practicing cough etiquette, giving up spitting and smoking, and encouraging non-contact greetings are needed to effectively 'break the chain of transmission'. This could also be a time to address infrastructure gaps. For example, the infrastructure for digital communication can be improved through the use of temporary cellular towers or balloons, and the introduction of community radio or battery-operated public-

address systems. The possibility of setting up solar cells and batteries, or micro-hydroelectricity generators can be explored in areas where electricity is not available. Before the epidemic overruns an area, high school and college students can be empowered to take these ideas forward by building on pre-existing expertise. In some villages, teachers or volunteers visit their students to provide emotional support and encouragement, and distribute rations from the midday meal scheme (so that the children do not go hungry).

The shortage of medical infrastructure could be imaginatively addressed by turning village schools, colleges, and other such buildings into temporary quarantine shelters for housing contacts. While rapid testing technology is being developed and mass produced, community health workers can be taught how to clinically diagnose COVID-19 syndrome as described by Professors M S Seshadri and Jacob John (see Jacob T. John's article titled 'Mitigation of the COVID-19 Epidemic' in the same issue). Providing every health centre with portable oxygen concentrators, which can extract nitrogen from atmospheric air, will help make oxygen available for patients with mild symptoms of breathlessness. Together, these measures will enable the treatment of nearly 90% of people infected with COVID-19 in villages. Less than 10% of infected people would need to be transported to medical centres outside the village. The workforce for supervision of these treatment centres could be enhanced by engaging the services of unregistered, informal health workers. These health workers could be trained to use clinical guidelines and protocols for COVID-19, as has been done successfully in the case of childhood pneumonia. It is important to remember that ASHA (Accredited Social Health Activists)

workers, who are at the bottom of the health provider's pyramid, are the foundation and basis of our healthcare workforce. The strength and effectiveness of the entire health service depends on them. Rather than being empowered and strengthened, they are often weakened by delays in paying their meagre salaries (for example, in some states, their salaries have not been paid since February). Their already full work schedules have been increased exponentially during the epidemic. These workers are now involved in contact tracing, watching for symptoms of fever and cough in the community, supervising home quarantines, counselling relatives of patients, delivering groceries, food and medicines to families from common kitchens, etc. Often, they are expected to carry out these additional responsibilities without appropriate training and PPE (personal protection equipment). This needs to be addressed on a war footing.

Parting thoughts

Gandhiji envisioned a future where our villages developed into healthy, self-sufficient units without the dehumanization that seems inevitable at the much larger scale of cities. The COVID-19 epidemic is an opportunity to make that dream come true. While the world is waiting anxiously for a vaccine against SARS-CoV-2, it is vital to utilize the vaccine that we already have in our hands — education against the virus of panic, selfishness and violence that has tragically accompanied the COVID-19 pandemic. We can overcome this adversity by learning how to bridge gaps and prepare for disasters from past mistakes; making long-term investments in public education and health infrastructure; and building trust, confidence, and mutual respect within our communities.

Key takeaways

- The rapid rise and spread of COVID-19 infection in rural India may have been fueled by the return of guest workers from big cities to their homes as a result of the nationwide lockdown.
- Those most vulnerable to COVID-19 need to be protected through a reverse quarantine approach with appropriate physical and psychosocial support from the community.
- Social and cultural gatherings need to be curtailed to the bare minimum, and gatherings for essential services need to be moved to well-ventilated outdoor spaces to minimize physical contact.
- Improvements in infrastructure gaps coupled with context-dependent methods like the use of loudspeakers, smartphones, television and community radio programmes can help meet educational needs and create awareness of the disease.
- Infrastructure gaps in medical services can be addressed through imaginative measures, as well as the education, training, and empowerment of formal and informal health workers.
- Adversities in rural India can be overcome through learning from past mistakes, making long-term investments in public education and health infrastructure, and building trust, confidence, and mutual respect within communities.

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