

## **MORE THAN A CRISIS, A CHANCE TO REBUILD HEALTH CARE**

**Innovations in managing the COVID-19 pandemic can help India  
revolutionise care delivery and related outcomes**

On July 10, the Director-General, World Health Organization (WHO), Dr. Tedros Adhanom Ghebreyesus, acknowledged the success of Mumbai's densely populated Dharavi slum in containing the COVID-19 pandemic. Mumbai, Delhi, Chennai, Ahmedabad and Bengaluru are among India's major metropolitan agglomerations and are also the current foci of the pandemic within the country. This points to both the speed and the scale of the epidemic moving within densely populated areas as well as success in the way sustained municipal efforts and community participation can together blunt the spread of the virus. The case of Dharavi is an example.

### **Opportunity to act**

On the previous day, nearly 100 days after the first 14-hour janata curfew day on March 22, the Minister of Health highlighted how 49 districts out of the 733 in India accounted for 80% of the nearly eight lakh cases, with eight States accounting for 90% of all the incident cases. Since then, the overall case numbers have moved steadily past the million mark and India is now third in global case standings. Despite this position, and the daily accretion of new infections that are upwards of 30,000 in the past few days, the distribution of cases also presents itself as the world's biggest opportunity to intervene and blunt the global toll of the epidemic.

Taking the given numbers at face value, there are on average roughly 250 cases per district in about 700 districts; many of these districts may be closer to having no cases, while others may be at a significantly higher incidence. Be that as they may be, the low numbers in a large number of districts present officials the opportunity of stemming the epidemic and preventing morbidity, mortality and economic distress in a significant way.

### **Key steps at ground level**

The first step towards this would be to disaggregate the COVID-19 tracking mechanisms and the national level tables and graphs that are updated daily. Instead, there should be 733 district-level versions, where each one is updated and reported on a daily basis, at the district level. State and national summaries are important but are not as critical as ensuring the accuracy and timeliness of district-level tracking. The first output of such disaggregation will be to see, with great relief, the number of districts with extremely small or no incidence numbers. In order that they retain their low incidence status, such districts should be supported with all comprehensive testing kits and contact tracing know-how. The earlier scheme of designating districts as green, yellow and red will be strengthened with this disaggregated reporting.

A significant step in this direction would be to encourage District Magistrates (as they are already empowered), to use the full range of social support schemes available in support of the District Health Officer and team, to be able to prevent anyone from facing situations of hunger or economic distress. In addressing an epidemic, if better household nutrition and income outcomes can be obtained, then these would be a huge win — this has been an aim but on this, there has been widely variable achievement.

The testing capacity in the district can be scaled up dramatically by coopting the science departments of every college and university. Thus, chemistry and zoology-allied departments such as microbiology and biochemistry can lend their laboratory services to carry out basic polymerase chain reaction (PCR)-based tests. This will require administrative imagination and collaboration from the Indian Council of Medical Research, the Department of Biotechnology as well as the University Grants Commission. Such a step can create the equivalent of the rush, as seen in the late 1990s, for information technology/computer training among students for better job prospects. Despite all the current uncertainty, one thing is certain — health care will be a reliable career opportunity (from the laboratory to the bedside, and all points in between and beyond). Not using emerging talents in

educational institutions in tier 2 and tier 3 towns in many districts in India would be a wasted opportunity, both in terms of training and nurturing ambitions.

### **On testing**

For those who point to the complexity of current testing protocols, and difficulty in coopting college-level infrastructure and staff, it would be good to look at rapid innovations that have been surfacing within the past 12 weeks globally. It will not be very long before testing could become a self-administered process. One has to look at recent insights into using saliva as the start point for testing rather than using a nasopharyngeal swab for sampling.

Increased testing is not only necessary, indeed, it will be the single biggest contributor to stemming the tide of morbidity and mortality in India and the rest of the world. Wherever testing has been constrained, incidence rates have risen. Epidemics are not to be treated as law and order situations with policing. Lockdowns, without on-demand testing, are administratively easy-to-administer exercises. But they are harsh, with possibilities of multiple collateral damage at the community and economy levels.

Freely available, quality assured testing, even without lockdowns, can achieve far more — they inspire confidence among the population, encourage early treatment seeking behaviour, and at a public health level, enable the understanding of disease dynamics within the community. Imaginatively expanding testing by coopting all colleges and technical institutions (till individual level test kits become available) represents the best opportunity to prevent the epidemic from becoming a surge in over 80% of the Indian population.

### **Chance for biotech**

Besides providing opportunities in the health-care and biotechnological spheres for young minds, the emphasis should also be to encourage innovators and entrepreneurs to bring out and scale up their products without making compromises on the standards or rigor of evidence needed for regulatory and manufacturing approval. India is the pharmacy to the world, and with a coordinated effort, the COVID-19 crisis can provide the Y2K equivalent for India's biotech and biopharmaceutical enterprises. At the moment, the world is increasingly looking at personalised diagnostics and therapeutics.

If with a positive test report, COVID-19 positive individuals were able to monitor their own oxygenation status at home, along with basic fever management medicines, and based on predetermined cutoffs, were able to seek and obtain care at oxygen equipped care facilities, we would both be building on expanding the network of monitoring exponentially, and addressing morbidity earlier in its course. This requires two bold administrative leaps: ensure every positive diagnosis report is also delivered along with a pulse oximeter and phone number to call and report status on; and ensure that there would be enough oxygen-equipped beds in every nook and corner of the country.

Both are industry-supporting leaps. The availability of oxygen and its measurement in individuals have health and economic impacts, and the earlier both are made at significant scale, the better the outcome for a large number of individuals who just need additional oxygen support to make it to the other side of a COVID-19 illness.

For the roughly 3% to 5% of people who will need more than oxygen support, we need to ensure that our doctors, nurses, laboratory personnel and floor workers in hospitals are protected with everything they deserve — personal protective equipment to safety at home, and salaries on time. In tandem, critical engagement from Indian biopharmaceutical and biotech companies should be encouraged to produce validated and affordable antiviral drugs and monoclonal antibodies.

India's general health-care spending has been far below optimal. But if innovations to help manage the current crisis are suitably capitalised on, they can enable India to move far ahead in health-care delivery and related outcomes. COVID-19 is both a crisis and an opportunity for

health-care reform as well as understanding the interplay of health outcomes with social and economic support interventions, and limitations of law enforcement in managing epidemics.

### Meanings of Difficult Words:

- ❖ **pandemic** (noun) – the worldwide spread of a new disease; The illness spreads around the world and typically affects a large number of people across a wide area.
- ❖ **revolutionise** (verb) – make far-reaching changes in, restructure, reorganize, reform.
- ❖ **acknowledge** (verb) – admit, accept, realize.
- ❖ **metropolitan** (noun) – a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure, and housing.
- ❖ **agglomeration** (noun) – collection of things; mass (of things); assemblage.
- ❖ **focuses or foci** (noun) – plural of “focus”.
- ❖ **point to** (verb) – indicate, suggest, denote.
- ❖ **epidemic** (noun) – widespread disease/ illness; outbreak, plague, scourge.
- ❖ **sustained** (adjective) – continuous, constant, steady.
- ❖ **community participation** (noun) – it is defined as the involvement of people in a community in projects to solve their own problems.
- ❖ **blunt** (verb) – reduce, decrease, lessen.
- ❖ **curfew** (noun) – a rule which is instructing people to stay at home, typically at night.
- ❖ **highlight** (verb) – underline, underscore, emphasize, call attention to.
- ❖ **account for** (phrasal verb) – constitute, make up, comprise, form.
- ❖ **accretion** (noun) – accumulation, growth, increase, rise.
- ❖ **toll** (noun) – number, count, sum total (of deaths/ casualties).
- ❖ **take something at face value** (phrase) – to accept or believe something as someone says without thinking whether it is true or not.
- ❖ **incidence** (noun) – it refers to the number of new cases that develop in a given period of time whereas prevalence refers to the number of cases of a disease that are present in a particular population at a given time.
- ❖ **stem** (verb) – lessen, reduce, diminish; control, restrain, restrict.
- ❖ **morbidity** (noun) – an unhealthy state; abnormal/gloomy condition; the quality of being morbid.
- ❖ **mortality** (noun) – (in a particular time/for a cause) the rate/number of death.
- ❖ **distress** (noun) – hardship, adversity, misfortune, difficulty, trouble.
- ❖ **ground level** (noun) – most basic level.
- ❖ **disaggregate** (verb) – separate (something) into parts.
- ❖ **mechanism** (noun) – procedure, process, method/ technique.
- ❖ **timeliness** (noun) – punctuality, promptness, appropriateness.
- ❖ **disaggregation** (noun) – a process of separating (something) into parts.
- ❖ **comprehensive** (adjective) – all-inclusive, broad-based, complete/thorough.
- ❖ **contact tracing** (noun) – it is defined as the identification and followup of persons who may have come into contact with a person infected with the virus.
- ❖ **know-how** (noun) – knowledge, expertise, skill.
- ❖ **designate** (verb) – identify, recognize, state, classify.
- ❖ **magistrate** (noun) – the judicial officers or civil officers of a state who handle minor legal cases in a specific area like town, district etc.
- ❖ **empowered** (adjective) – authorized, allowed, entitled.
- ❖ **hunger** (noun) – lack of food, need for food.
- ❖ **widely** (adverb) – generally, commonly.
- ❖ **household** (noun) – family, house.
- ❖ **nutrition** (noun) – the process in which necessary food is received/obtained by the living things to grow and be healthy.
- ❖ **scale up** (phrasal verb) – increase (in size or number).
- ❖ **co-opt** (verb) – subsume, incorporate, integrate.
- ❖ **carry out** (phrasal verb) – conduct, perform, execute.
- ❖ **RT-PCR testing** (noun) – Reverse Transcription Polymerase Chain Reaction (RT-PCR) Testing; it is one of the most accurate laboratory methods for detecting, tracking, and studying the coronavirus. It is a nuclear-derived method for detecting the presence of specific genetic material from any pathogen, including a virus. (pathogen is a bacteria/virus that causes disease).
- ❖ **imagination** (noun) – interest, attention; creativity.
- ❖ **collaboration** (noun) – cooperation, joint action, partnership.
- ❖ **rush** (noun) – (strong & sudden) demand, call, run.
- ❖ **prospects** (noun) – chances, possibilities, expectations, outlook.
- ❖ **uncertainty** (noun) – unpredictability, unreliability, riskiness/precariousness.

- ❖ **tier** (noun) – grade.
- ❖ **nurture** (verb) – encourage, promote, foster.
- ❖ **protocol** (noun) – procedure, convention, rules of conduct.
- ❖ **surface** (verb) – appear, come to light, emerge.
- ❖ **self-administered** (adjective) – (of a drug etc) provided/taken by a person to himself /herself.
- ❖ **insight** (noun) – understanding, revelation, realization/recognition.
- ❖ **saliva** (noun) – watery liquid produced and secreted by salivary glands in the mouth.
- ❖ **nasal swab** (noun) – a method for collecting a clinical test sample of nasal secretions from the back of the nose and throat. (“swab” is piece of soft, absorbent material attached to a stick to take samples of body fluids, clean wounds or apply medicines).
- ❖ **indeed** (adverb) – in fact, actually.
- ❖ **tide** (noun) – tendency, trend.
- ❖ **constrain** (verb) – restrict, limit, restrain.
- ❖ **policing** (noun) – the enforcement of rules/regulations.
- ❖ **lockdown** (noun) – an emergency protocol implemented by the authorities that prevents people from leaving from a place; An extended state of confinement/encirclement/isolation of a person by the authority.
- ❖ **collateral** (adjective) – incidental, accidental, unintended, resultant.
- ❖ **collateral damage** (noun) – any death, injury, or other damage inflicted that is an unintended result of a particular operation.
- ❖ **far more** (phrase) – a lot more, much more.
- ❖ **dynamics** (noun) – basic/fundamental cause or force which triggers change within a system.
- ❖ **surge** (noun) – sudden increase, rise, growth.
- ❖ **sphere** (noun) – an area of activity.
- ❖ **emphasis** (noun) – importance, insistence, priority.
- ❖ **entrepreneur** (noun) – businessman, businesswoman, business person.
- ❖ **bring out** (phrasal verb) – disclose, reveal, expose, become known.
- ❖ **compromise** (noun) – undermining, weakening, lessening.
- ❖ **rigor** (noun) – attention to detail, diligence, accuracy/ precision.
- ❖ **regulatory** (adjective) – governmental, supervisory, organizational, controlling.
- ❖ **Y2K** (noun) – Year 2000; commonly used to refer to a widespread computer programming shortcut that was expected to cause extensive havoc as the year changed from 1999 to 2000.
- ❖ **personalised** (adjective) – relating to something which is done to meet someone’s individual requirements.
- ❖ **diagnostics** (noun) – the practice of diagnosis (identifying the nature and cause of an illness/condition by examination).
- ❖ **therapeutics** (noun) – the remedial treatment of disease/disorders; therapy, medical attention, medical care.
- ❖ **oxygenation** (noun) – the addition of oxygen to any system, including the human body.
- ❖ **predetermined** (adjective) – prearranged, preset, pre-planned.
- ❖ **cutoff** (noun) – a fixed point/level (as a limit for something).
- ❖ **build on** (phrasal verb) – expand on, enlarge on, develop, enhance.
- ❖ **exponentially** (adverb) – rapidly, quickly, swiftly (in relation to an increase of something).
- ❖ **course** (noun) – progression, advancement, progress, flow/rise.
- ❖ **leap** (noun) – a sudden/quick change, move.
- ❖ **pulse oximeter** (noun) – pulse oximeters are medical devices that monitor the level of oxygen in a patient’s blood and alert the health-care worker if oxygen levels drop below safe levels, allowing rapid intervention
- ❖ **every nook and corner** (phrase) – every part of something.
- ❖ **personnel** (noun) – staff, employees, workforce.
- ❖ **personal protective equipment (PPE)** (noun) – safety gear; protective clothing, helmets, masks, goggles, gloves or other garments or equipment designed to protect the wearer’s body from injury/disease.
- ❖ **in tandem** (phrase) – alongside each other.
- ❖ **monoclonal antibody** (noun) – antibodies that are made by identical immune cells that are all clones of a unique parent cell.
- ❖ **antibody** (noun) – it is also called ‘immunoglobulin’; a protective protein produced mainly by plasma (blood) cells in the immune system in response to the presence of antigens (disease causing organisms (bacteria & viruses) and other harmful/toxic foreign substances like insect venom).
- ❖ **optimal** (adjective) – optimum, ideal, perfect.
- ❖ **capitalise on** (verb) – take advantage of, exploit, benefit from.
- ❖ **interplay** (noun) – interaction, interchange, teamwork, cooperation.