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Lessons from India's Second Wave of COVID-19

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1. Support evidence based medicine: A key problem that emerged during the second wave was the misuse of medicines, which tended to worsen clinical outcomes. Medicines like Hydroxychloroquine, Ivermectin, Azithromycin, Doxycycline and Zinc supplements, none of which have proven to be effective against COVID-19, have been prescribed in very large quantities. In fact, some state governments even supported prophylactic consumption of some of these medicines. Besides the deleterious effects of consuming powerful medicines unnecessarily, it raises serious concerns around antimicrobial resistance, already a major problem in India.

Worse still, the one drug known to have a positive impact on clinical outcomes -- steroids, especially Dexamethasone -- have been prescribed at the exact wrong time, i.e. during the viremic phase, which have worsened outcomes, sending patients who were at home with mild infections to hospitals and ICUs. Thankfully, external pressure has led to the Ministry of Health removing most of these drugs from their protocols. However, constant vigilance is needed on this front to avoid newer drugs being prescribed to COVID-19 patients with little evidence of their efficacy. Protocols must be simple, easy to understand and implement.

In the same vein, with evidence on clinical management constantly evolving, more support is required for the continuous upgradation of the knowledge of healthcare workers, especially in peri-urban and rural areas. This will ensure better outcomes and will limit the risks associated with over-medication. These guidelines should be disseminated through medical associations and hospital groups. In addition, simple guidelines should be communicated to the general population, to limit and control self-medication and the demand for maximal interventions where minimalism will suffice.

2. Conduct serological surveys: Conducting serological surveys across different geographies and populations is essential to understand the dynamics of transmission, identify the most vulnerable groups, and guide control measures. For instance, the first serological survey conducted in Mumbai in 2020 showed that 57% of slum populations had antibodies, while only 16% of high-rise populations had antibodies, suggesting a high level of susceptibility in high rises. Since then, data released by the Mumbai Municipal Corporation suggests that 90% of infections in the second wave were in the high-rises, demonstrating the value of serological surveys.

These surveys should be conducted in multiple settings (rural/urban areas, slums/societies) and multiple populations (adults/children) to get a better understanding of the situation. The adoption of new testing tools such as point-of-care quantitative antibody tests can help scale this up.

3. Develop data-driven vaccine allocation plans: Vaccine doses should be prioritized to the most at-risk populations based on demographics, geographic locations, and risk factors. These allocation strategies should be updated regularly to include emerging evidence from serological surveys and ongoing infection. This will ensure that limited doses are used optimally to maximize the impact of vaccination both in terms of lives and livelihoods. Vaccine hesitancy and access issues should be addressed to ensure priority populations are reached by the vaccination campaign.

4. Ramp-up genomic surveillance: The circulation of variants of concerns (VOCs) has a major impact on both dynamics of transmission and effectiveness of vaccination. The recent increase in circulation of VOCs calls for a ramp-up of genomic surveillance. This will help to monitor the prevalence of identified VOCs and detect the appearance of new strains. Ramp-up can include enabling existing labs to conduct genomic sequencing and creating a platform to standardize reporting. In addition, studies should be carried out to better understand the transmissibility and virulence of new strains as well as their impact on vaccine efficacy.

5. Adopt localized step-wise reopening strategy: Lifting restrictions post lockdown requires a carefully crafted strategy to avoid a spike in cases. The strategy should be based on three criteria:

- Stage-wise: A window of three weeks should be left before a new set of authorizations/restrictions is implemented. This will allow a proper impact assessment of the ongoing stage. The restrictions associated with each level of reopening should be clearly communicated to the industries and general public.

- Data-driven: The decision to move one level up or down in restrictions should be based on the following indicators (to be monitored on a daily basis):

    - Effective reproductive rate
    - Daily new COVID-19 cases and test positivity rate
    - Vaccination rate
    - Availability of hospital beds and oxygen

- Localized: The opening of service, retail and manufacturing sectors should be tailored to the economic environment in order to minimize economic disruption

6. Scale-up Non Pharmaceutical Interventions (NPIs): Non Pharmaceutical Interventions, especially mask wearing and improved indoor ventilation, are essential to limit virus transmission. Implementation of these NPIs are currently dependent on individuals following COVID-19 Appropriate Behaviours. Due to pandemic fatigue and lack of information, these are not followed appropriately. Governments can support better implementation of NPIs through:

- Mask distribution campaigns along with behavioural science-based interventions to ensure

higher take-up.

- Recommendations to improve ventilation in public buildings and support to organize essential activities in outdoor areas

In the medium term, investments should be made to improve ventilation systems in buildings. This is essential post-pandemic as well to decrease transmission of other airborne pathogens such as influenza and tuberculosis.

7. Guide industries: Provide easy-to-implement and comprehensible guidelines for each sector on best practices to reopen safely and limit virus transmission within their premises. This should include guidance for risk assessment, recommendations for vaccinated and unvaccinated employees, maximum number of employees on site, mask mandates, hand hygiene, improving indoor ventilation, and a well thought out testing strategy.

8. Set-up early-warning systems: They help identify early clusters, predict surges and pinpoint locations for targeted testing. This can be a two-fold approach based on wastewater and sentinel surveillance systems. Wastewater surveillance has proved to be an effective and affordable way to detect transmission. This can be complemented by sentinel surveillance in high-risk groups.