**Summary Report**

# Pandemic Preparedness and Mounting Responses

## Moderator

- **Dr. Subhash Hira** | Professor of Global Health, University of Washington,

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## Speakers

- **Dr. Xiao-Nong Zhou** | Professor, Director, National Institute of Parasitic Diseases, China CDC
- **Mr. Jai Mrug** | Founder and CEO, M76 Analytics

## Discussion Summary

The second session of the Webinar Learning Series addressed the theme of 'Pandemic Preparedness and Mounting Responses', with speakers from China and India exchanging regional perspectives and lessons from COVID-19 containment interventions, transmissions, and recovery patterns.

Dr. Xia-Nong Zhou, representing China CDC and co-presenting with his colleagues Ning Xiao and Shan Xiao, shared lessons learned from the China experience of battling and containing the outbreak as well as measures that enabled protection against reinfections. In Wuhan, there was fatality rate of 5.6% during two months of lockdown. Now, it's three months after shutdown was stopped in gradual steps, and no new cases of COVID-19. There was no case of reinfection. Stressing the importance of contact tracing, they shared mathematical models and computational methods developed by CDC China to estimate the contact frequencies of different age groups across various social settings.

Speaker Jain Mrug shared data insights based on transmission patterns across the world. Linking cross-border transmission to economic and travel integration between countries and geographies, he drew important correlations between the spread of the Corona virus and various social, economic, and demographic variables. He suggested loosening economic and/or travel integration from high COVID prevalence countries or geographies at sub-national levels. He also highlighted low-cost housing infrastructure enabling proper social distancing as a foreseeable demand in India to protect against future disease outbreaks.

## Dr. Xia-Nong Zhou

**Key takeaways**

- Multi-sectoral cooperation is crucial for contact tracing. In China, the Department of Public Security in tandem with communications and community volunteers have collaborated to identify persons at-risk, carrying out duties almost like detectives.

- **[0:44:00] As you know in China, there are no new cases. But (now) we face challenges in the form of imported cases from outside.**

- **[0:46:15 - 0:49:46] – Summary of Lessons Learned.** Centralize close contacts for isolation. Transfer severe cases to provincial hospitals. Preparedness measures for prevention of outbreak and transmission in manufacturing establishments.

- **[0:52:00 – 0:53:38] – CDC has developed mathematical models and computational methods to study age-specific contacts occurring in different social settings.** 7 age-group categories (such as children, school-going, university, middle-age etc.) and 4 social settings were categorized (households, schools, physical workplaces, public places and communities). Computational methods estimated the contact frequencies between different age groups, as well as the contact frequencies between age groups in different social settings.

- **[0:57:50] – Based on our modelling, middle aged people must follow social distancing protocols with greatest intensity. Being family breadwinners or students, they interact in schools or workplaces and hence are the hotspots for disease transmission.**

- In China, social distancing and work resumption plans implemented were different for different cities. Population demographics vary in terms of age, type of work etc. and hence require different intervention measures.

- Using age specific contacts to characterize the disease transmission patterns can help in panning interventions across countries. CDC China has encouraged this method in different countries which are at various stages of the epidemic.

## Mr. Jai Mrug

**Key takeaways**

- If we look through the appropriate matrix, such as cases per million, we will see that the spread of the infection is strongly linked to economic and travel integration.

- [1:17:30 – 1:19:30] – How do you ascertain factors that are impacting the spread? It is the compounding effect of four key issues that demand our attention – International economic Integration, Internal integration of the regional economy, Population density in urban areas, and Social infrastructure enabling physical distancing.

- International economic integration is key to ascertaining the rate of spread of the Corona infection.

- Travel distance, a surrogate indicator for internal domestic economic integration, is a prime factor to be incorporated in any infection spread model.

- If you are far from an economic epicenter and there is a general absence of other incidental factors, the likelihood of infection is lower. But a combination of proximity to economic epicenters and high population density is certainly a factor for high rate of infection.

- **[1:24:05 - 1:26:50] - While population density is used in most of the popular models, it is not as important a factor as the physical infrastructure available to implement social distancing.**

- **[1:26:50 - 1:30:20] – The flattening of cases is the agreed upon metric to judge containment. Mapping the death rate and recovery rate can also be analyzed as an important metric to ascertain the extent of recovery.** The wider the funnel between the death and recovery curves, the closer we are to reducing the magnitude of virus's impact. Widening of the funnel can also act as a signal to government's looking to resume economic activities.  Please add Funnel slide here.

- To optimize public health in the wake of COVID-19, we can start thinking of possibility of breaking up the value chain of medical consultation engagement amongst different players. Most services are now becoming home or delivery based. Housing societies or condominiums can create secure spaces wherein the collection of pathological samples can take place. This, combined with medical information from tele-consultations and other medical histories, can be stored in digital vaults. Based on this patient information, doctors can deliver prognosis with minimum contact.

- Low-cost housing in India might emerge as an economic opportunity post-COVID. By creating the infrastructure that enables proper social and physical distancing, housing for low-income groups can reduce risks associated with future disease outbreaks, as well and uplift the sanitation and hygiene standards of the country.