

Voice of Expert

Pandemics — The Current and the Future

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Dr Shambo Samrat Samajdar, MD, DM, conducted an online interview on behalf of the JIMA regarding the current and future Pandemics Scenario

Q 1 : After the nightmarish experience of two years of the COVID-19 pandemic, we in India are desperately trying to regain normalcy in public and professional life. But the Government of India has not yet officially called an end to the pandemic. On an average, more than 3 lakhs of RT-PCR tests for diagnosis of Covid-19 per day being done with a positivity rate of less than 0.1 per cent. When will this pandemic be really 'over'?

Ans : Let me start with quoting Michael Osterholm, the noted environment health expert and an infectious disease epidemiologist at the University of Minnesota, *"We are in totally uncharted territory from the perspective of understanding what a pandemic is, how it starts, how it unfolds, and how it ends."*

The onset or the end of a pandemic is not limited to geographic confinement of any given country. It is global. Truly, it is not easy to say when would the COVID-19 pandemic end. The pandemic was declared a public health emergency of international concern (PHEIC) by the World Health Organization (WHO) on 30th January 2020, and ever since the WHO has been continuously assessing the status of the pandemic. The WHO Expert Committee is actively considering when it's end can be officially declared. The 196 WHO member countries including India are bound by international health regulations to follow WHO recommendations in this regard. While the UK, Denmark, the Netherlands have functionally declared an end to the pandemic in their countries, other nations like New Zealand and Hong Kong are struggling with record-breaking surges. The real end of the pandemic would perhaps come only with the arrival of a 'final variant' of the SARS-Cov-2 virus that is too weak in terms of virulence and transmissibility. *"If I was a betting man, I would say probably in about 2, 3 years we will get to that point."* says Salim Abdool Karim, an epidemiologist and the chief COVID-19 scientist of South African government.

Q 2 : Do you think the COVID-19 pandemic could have been better controlled? Was the disastrous outcome entirely due to the virulent virus or could it considerably also be attributed to the social, political and public health system under-preparedness?

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Ans : The risk of a pandemic has much to do with factors beyond just a biological model of an optimally virulent and transmissible pathogenic microbe. Despite being warned by a series of zoonotic disease outbreaks with SARS, Nipah, MERS, H7N7, Ebola, H1N1 viruses, having occurred in different parts of the world over *the past two decades*, we failed to prepare ourselves adequately for and appropriately respond to the COVID-19 pandemic. And it seemed as if the pandemic almost caught us totally unaware. On a positive note it may be said that the COVID-19 vaccines could be developed at an unprecedented speed. And the fast-track development was possible because of the readiness with different viral vaccine platforms. But when we consider the distribution of and access to the vaccines, it was far from equitable. It's all about awareness and preparedness. Preparedness for controlling the consequences of a pandemic is certainly important. But even more important is the need to tackle the cause of a pandemic. The under-preparedness in terms of social, political and public health system was grossly evident across borders of different countries.



**Professor Santanu
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Q 3 : SARS, Ebola, Zika, and now COVID-19 – why are disease epidemics and even pandemics becoming increasingly common day by day?

Ans : *"The number of new infectious diseases with epidemic potential has increased nearly four-fold over the past six decades. Since 1980, the number of new outbreaks per year has more than tripled."* says Alimuddin Zumla of University College London, London, UK. There are a number of factors responsible for this. The most striking of them are : (1) widespread deforestation and urbanization disturbing the biogeographical ecology and dynamics of infections, (2) increasing wild life trade and animal-human contact with compounded probability of spillover of pathogens from animals to humans, (3) climate change and frequent climate shock events leading to human

displacement, migration and vulnerability to infections, (4) transnational spread of infections through more and more frequent air travels, and (5) disproportionately low emphasis on public health measures in preventing and controlling infectious disease outbreaks.

Q 4 : What strategies can be adopted to minimize spillover risks?

Ans : The strategies for minimizing spillover risks are multi-pronged. These include: (1) Remove all subsidies favoring deforestation and levy taxes to all projects that involve deforestation. (2) Strengthen wildlife management and regulate wildlife trade, and ban the trade of high-risk species like primates, bats, pangolins, civets, and rodents. (3) Increase public awareness on animal handling and risk of disease transmission. (4) Ensure cross-sectoral collaborations for zoonotic disease prevention and control. (5) Ensure early detection and control measures, including creating a library of virus genetics to pinpoint the source of a newly emerging pathogen early enough to slow or stop its spread. (6) Spend to reduce viral spillovers, or inter-species transmissions, in livestock.

Q 5 : What is the rationale for the One Health (OH) Approach in strategizing prevention and control of future pandemics?

Ans : We need to appreciate that we are in an era of pandemics and the Covid-19 pandemic is certainly not the last of it's kind. The next one may be more devastating. We need to understand the zoonotic link in infectious disease outbreaks of epidemic/pandemic proportions. With deforestation, wildlife trade, global travel etc. and consequent increasing probability of animal-human conflicts and contacts, there are escalating zoonotic risks through spillover and human transmission. We cannot afford to consider human health *in silo* any longer. It's time we unite human health, animal health and environmental health. And this OH Approach is the key to prevention and control of pandemics. We must primarily engage in identifying animal pathogens with potential for human pathogenicity, in understanding factors promoting their spillover to humans, and in continuous surveillance, risk forecasting and management. We need to also meaningfully operationalise the OH strategies through effective inter-sectoral convergence and coordination. The social, political and cultural considerations are to be integrated adequately in a balanced manner in our drive towards prediction and prevention of future pandemics. Transnational collaboration is also extremely important.

Q 6 : Would you briefly explain WHO's Disease X concept for prevention and control of future pandemics?

Ans : Disease X is a placeholder name adopted by the WHO in 2018 to represent a *hypothetical*,

unknown pathogen that could cause a future epidemic. This is to ensure that their planning is flexible enough to adapt to any future unknown pathogen with epidemic/pandemic potential and to engage in pre-emptive and broad measures like fast-track development of vaccines and other suitable medical countermeasures. This is also to encourage WHO projects to focus their research efforts on entire classes of viruses (e.g., flaviviruses), instead of just individual strains (e.g., zika virus), thus improving WHO capability to respond to unforeseen strains.

Q 6 : What you suggested would likely incur huge financial investment. How would that be possible for most low and middle income countries (LMICs) like India?

Ans : "An ounce of prevention is worth a pound of cure." Said Benjamin Franklin. The costs of preventing future zoonotic outbreaks like COVID-19, by preventing deforestation and regulating the wildlife trade, are as little as 2% of the economic and mortality costs of responding to the COVID-19 pandemic, which according to some estimates could reach even \$20 trillion. Stimulus funding should be used to reduce the risk of disease spillover from animals to humans. In March 2020 as the Covid-19 pandemic was just starting to unfold, a proposal for a Fund for Global Health Security and Pandemic Preparedness was built on a call from global health policy experts. Such a Fund is meant for catalyzing sustainable financing to bridge the country-identified gaps in health security capacity. The idea was soon championed by other international agencies. The G20 leaders reached a consensus in early 2022 to establish a new Financial Intermediary Fund (FIF) at the World Bank for this purpose. Now the WHO and its member nations are to design the financing priorities, investment modalities, monitoring and evaluation, governance, and accountability structures for the FIF. It's time that the LMICs including India appropriately plan the program for OH operationalisation through context-specific understanding of the dynamics of cross-sectoral collaboration. Awareness and sensitization of all stakeholders are essential for optimum implementation of the OH approach.

To predict and prevent pandemics, go beyond 'in silo' – it's one earth and one health – break the borders – converge, coordinate and collaborate.

**Prof. Santanu K. Tripathi,
Thank you for the valuable insight into
'Pandemics
— The Current and the Future'.**