

# Editorial

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## Emerging Pathogens and Emergent Risks Amidst Urbanization and Globalization

The World is increasingly witnessing emerging and reemerging diseases into human health systems unfolding hitherto unknown challenges. Diseases known to have killed millions during antiquity, such as tuberculosis, plague, cholera and influenza, malaria, measles, diphtheria, polio, tetanus and yellow fever and are re-emerging in epidemic proportions. In addition, respiratory infections, infectious diarrhea, meningitis, HIV-AIDS, dengue, H1N1, ebola, zika, SARS and MERS coronaviruses have emerged as diseases of significance in the 20th century. Numerous outbreaks, epidemics and ongoing pandemics of emerging infectious diseases have not only plagued societal healthcare resources but also brought forth emergent risks of covert reservoirs, global spread, heavy morbidity and mortality. There is a complex interplay of environmental, sociocultural and public health factors in developing economies undergoing rapid urbanization and globalization.

Tuberculosis has emerged as the world's largest killer amongst infectious diseases since 2015 overtaking HIV-AIDS which remained as the largest killer till 2014. India hosts 20% of all tuberculosis patients and thus called the 'World's tuberculosis capital'. Tuberculosis affects one person every second and kills one patient every minute. Developing economies are battling overcrowding, immunocompromised states and poor socioeconomic status which increase the burden and transmission of tuberculosis.

India is undergoing rapid intense transmission of swine influenza H1N1 even when H1N1 is circulating as seasonal influenza worldwide being in post-pandemic phase. The outbreaks of 2015, 2017 and 2018 are attributable to low herd immunity due to limited exposures owing to overpopulation and inadequate immunoprophylaxis.

Mosquito transmitted annual epidemics of dengue, malaria, chikungunya, zika, Japanese encephalitis call for environmental hygiene and sustainable development. The fifth species *Plasmodium knowlesi* and fifth serotype Dengue-V have emerged amidst existing biodiversity. Zika has rapidly affected 150 patients in Rajasthan and is slated for explosive global spread. Immunoprophylaxis against Japanese encephalitis is well established however no vaccine is yet approved in India for other mosquito-transmitted diseases.

The prolonged outbreak of cholera in Yemen by *Vibrio cholera* O1 El Tor Ogawa has affected 10 million people with 2500 deaths since 2016 with no signs of respite despite coordinated philanthropic efforts of WHO, Medecins sans frontieres and United Nations. WHO has described the Yemen cholera outbreak as the worst cholera epidemic in the history of mankind, and unfortunately, it is a war-induced man-made disaster. The plague epidemic in Madagascar from 2016–2018 owing to continuous rainfall and 'Famadihama' ritual reflects effects of climate change and sociocultural factors in infectious diseases.

The first issue of Journal of Medical Academics beholds the promise of a scientifically argumentative generation of doctors exposed to evidence-based medicine ab initio. The parallel impetus on concept development of patient-front health care and research-front health care is likely to enhance capacity building of healthcare resources where the doctor has an important leadership role towards building a homogeneous healthcare team sensitized to healthcare needs of the community.

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