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Infectious disease outbreaks in India: urgent need for education and training reforms

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Introduction

The world continues to battle a global pandemic as well as a raging monkeypox outbreak, indicative of the higher frequency of disease outbreaks recently [1]. India is the second-most populated country worldwide. Indian policies play a pivotal role in the global health landscape, and a number of disease outbreaks have been recently noted in India. (Table 1) These are in addition to seasonal influenza and diarrheal outbreaks precipitated by pathogens like Norovirus. Healthcare systems are often underprepared in these situations.

As highlighted in a Lancet study, communicable diseases including parasitic and other infectious diseases accounted for a significant proportion of the national YLL (years of life lost due to premature death) [2]. The management of these infectious diseases causes immense financial strain on the national economy.

Treating these outbreaks involves a lot of specific skills including targeted history taking, community contact tracing and restricting the spread of the disease. While capacity building is a part of a much larger framework for improving healthcare system resilience, it is nevertheless a very vital cog in the wheel. This short commentary focuses on recommendations for reforming the Indian education and training framework that will better enable the country to combat these outbreaks.

Recommendations

India has a deficit of sufficient training spots for physicians to specialize in infectious diseases. Although, a large proportion of disease outbreaks may be managed by internal medicine, community medicine and chest medicine physicians, nevertheless the number of infectious disease specialists is negligible in the country.

The Clinical Infectious Diseases Society (CIDS) website lists a total of 22 positions for infectious disease residency available to candidates nationally after completing their MD degrees [3]. For those aspirants aiming to gain admission into infectious diseases directly after MBBS, there is a solitary seat available for a 6-year residency in infectious diseases at AIIMS, Delhi. In contrast, the United States having one-third of India's population offers a total of 436 positions for infectious disease fellowships [4]. Indian candidates have to instead undertake private fellowships, certificate programs and pursue courses abroad to gain expertise. Thus, there is an evident need to radically increase opportunities for the physician workforce to be trained adequately to tackle the burden of infectious diseases.

The second roadblock is the severe shortage of programs like Masters in Public Health (MPH) in India as compared to other countries. Training in such public health-oriented programs allows for holistic development of the workforce by providing knowledge in interrelated disciplines like statistics, epidemiology, public policy and behavioral sciences. Such training enables the 'improvement of health through a population focus' [5]. Only 44 institutions currently offer MPH courses in India [5], forcing interested students to again look elsewhere. Apart from standalone programs, countries like the U.S.A also offer a number of hybrid MD-MPH programs. The launch of such programs with a focus on public health would pave the way for a prepared workforce equipped to tackle upcoming challenges.

Another key focus is the improvement of infrastructure to tackle infectious diseases. Though India has recently initiated plans to open more virology institutes and high-containment biosafety laboratories to allow for more streamlined response to outbreaks, a lot can still be achieved. This improvement in infrastructure will allow medical and healthcare students to be exposed to

Table 1. A list of disease outbreaks in India in the preceding five years [1].

Year	Disease	Areas affected
2017	Zikavirus	Bapunagar (Gujarat)
2018	Nipahvirus	Kozhikode and Malappuram districts (Kerala)
2021	Zikavirus	Pune (Maharashtra); Trivandrum (Kerala)
2021	Avian Influenza A (H5N1)	Gurugram (Haryana)
2021	Nipahvirus	Kozhikode (Kerala)

infectious disease preparedness protocols at early stages of their professional careers through clinical rotations and electives in these institutes. This will also allow them to make informed career choices.

Conclusion

India is a tropical country with a high burden of infectious diseases. There is a shortage of an adequately trained healthcare workforce to tackle outbreaks. Improvement in education and training opportunities can tap into the potential of enthusiastic Indian youth allowing for improved levels of detection, surveillance and management in case of disease outbreaks. With improved strategies, multi-sectoral coordination and revamped focus on strengthening existing infrastructure, India can develop a very strong framework for battling disease outbreaks.

References

[1] Disease Outbreak News [Internet]. [cited 2022 Nov 16]. Available from: https://www.who.int/emergencies/disease-outbreak-news

[2] Menon GR, Singh L, Sharma P, et al. National burden estimates of healthy life lost in India, 2017: an analysis using direct mortality data and indirect disability data. Lancet Glob Health. 2019 Dec;7(12):e1675–84.

[3] DM [Internet]. [cited 2022 Nov 16]. Available from: https://cidsindia.org/dm/

[4] Medscape. Making sense of the ID fellowship match [Internet]. [cited 2022 Nov 16]. Available from: https://www.medscape.com/viewarticle/967752

[5] Tiwari R, Negandhi H, Zodpey S. Current status of master of public health programmes in India: a scoping review. WHO South-East Asia J Public Health [Internet]. [cited 2022 Nov 16]. Available from: https://www.who-seajph.org/article.asp?issn=2224-3151;year=2018;volume=7;issue=1;spage=29;epage=35;aulast=Tiwari