

View Point

The Growing Wrath Of Viruses in 21th Century and the Need for Army of Public Health Workers Against Them – Challenges And Opportunities

Running Title-Viruses in 21st century and need for community health workers

Dr.Aaina Sharma*, Poonam Khanna

Department of Community Medicine and School of public health PGIMER, Chandigarh 160012

***Corresponding Author:** Dr.Aaina Sharma

Email – aainasharma25.as@gmail.com

Abstract

The 21st century has seen a growing number of viral outbreaks, including the COVID-19 pandemic, which has affected millions of people worldwide. Throughout history, infectious illnesses with pandemic potential have frequently emerged and spread. Major pandemics and epidemics have already impacted mankind, including the plague, cholera, flu. Therefore, the need for an army of public health workers to combat these viruses has become more urgent than ever before. Public health workforce have played several roles including community awareness, engagement, sensitization (countering stigma) and contact tracing. Given their knowledge of the communities in which they serve, community health workers representation on regional and local decision-making bodies adds value. Community health workers (CHWs) conduct surveys, focus groups and community meetings gathering information on health strategy preferences for maximizing its uptake, also addressing any misinformation leading to reluctance.

Keywords- COVID-19, Communityhealth workers, Public health, Viruses

Introduction

About a century ago, the Spanish flu pandemic killed an estimated 50 million people [1]. Our understanding of disease transmission and

treatment now is far ahead of our position in 1918. These new viruses have shown the limits of our ability to deal with major disease outbreaks. This article elaborates on the relevance of putting public health workforce at the heart of strategies aiming to improve the global health status of the public. This article also focuses on the need of appropriate methodological approaches to conduct meaningful and reliable public health outcome.

Virus is an enemy which is invisible and sometimes deadly, and the task to handle it is harder. Examples of zoonotic diseases that have caused turmoil around the world include SARS-

CoV, Ebola, MERS-CoV, avian flu [HPAI Asian H5N1], Nipah[NiV], and SARS-CoV-2 virus developing the COVID-19 disease and now influenza and adenovirus [Figure 1]. Developing countries such as India suffer disproportionately from the burden of infectious diseases given the confluence of existing environmental, socio-economic, and demographic factors[2].

India's official cumulative COVID death count of 0.48 million implies a COVID death rate of 345 per million population, about one-seventh of the US death rate[3]. It is being found that close human-wildlife interactions are key to novel viral emergence. Due to increased human interaction with animals as a result of breeding, hunting, and international trade activities, zoonotic pathogens, which are infectious and can spread to human are susceptible to create a pandemic [4]. This is driven by anthropogenic environmental change

[e.g. rapid urbanization, agricultural intensification] and increased mobility from previously remote regions. All these factors increase the risk of viruses spilling over and spreading within our globalized population. Establishment of the germ theory and identification of specific microbes as a causative agent for a wide variety of infectious diseases led to notably the development of vaccines and antimicrobials[5].

Role of Public Health Sector

Public health workers play a crucial role in preventing and controlling the spread of infectious diseases. They work to identify, monitor, and respond to outbreaks, as well as educate the public on how to protect themselves and prevent the spread of disease. To effectively combat viral outbreaks, public health workers need to have the knowledge and skills to detect and respond to infectious diseases quickly and efficiently. They need to be able to work collaboratively with other health professionals, government officials, and community leaders to develop and implement effective prevention and control strategies. In addition to technical skills, public health workers also need to have strong communication and leadership skills. They must be able to effectively communicate complex information to the public in a way that is easily understood and actionable. They must also be able to lead teams and coordinate efforts across different agencies and organizations.

The COVID-19 pandemic has been the most difficult public health problem because it has worsened mental health conditions like stress, anxiety, fear, depression, and anger in addition to affecting the physical health of the world population. Health services, especially those of Low and Middle Income Countries (LMICs), are searching for options to provide psychosocial support to the people during and after this COVID-19 pandemic, despite the fact that mental health services are severely hampered.

Community health workers (CHWs) are an essential component of the health systems in many LMICs and have played important roles in COVID-19, past crises, and contact tracing,

isolation, and mobilization. However, despite their potentials in providing psychosocial support to the people amid this COVID-19 pandemic, they have been underutilized in most health systems in LMICs[6].

Opportunity

The American Public Health Association (APHA) defines community health workers more expansively as, “a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trustworthy relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery”[7].

Community health workers (CHWs) are poised to play a pivotal role in fighting the pandemic, especially in countries with less resilient health systems. In previous pandemics, community health workers have played several roles like generating community awareness, countering stigma and contact tracing. Community health workers (CHWs) engagement in contact tracing might hamper routine primary service delivery. So appropriate policies, guidance and training for these had to be developed[8].

Technologies like GIS system is a cost effective tool for the surveillance of diseases due to its ability to store both spatial and non-spatial data. It enhances the disease surveillance, vulnerability mapping and through Web-based GIS, it helps the decision maker to prevent, control and respond to a specific disease outbreak[9]. Therefore, workforce equipped with modern technical knowledge is required.

Policies based on scientific evidence are needed to support the transition to a safe and healthy way of living on this planet to be prepared for the next virus and to prevent it before it becomes yet another global outbreak. Bridging the gap between evidence generation and policy making is essential.

To ensure adequate resources and staffing, it was necessary to quickly train a large number of

healthcare workers to be on the frontline. Ideally, training and education in preparation for a new infectious threat should be continuous and planned ahead of time. Specialized training equips healthcare workers with the knowledge and skills to safely provide patient care; to reduce fatalities during an outbreak; and to prevent and control nosocomial infections[10].

The CHWs can be successfully utilized to offer psychosocial assistance at the community level. Since they are already in place, less expensive than other health experts, working with them can reduce cost[7].

Immediate investment in community health systems will help achieve the following goals:

1. PROTECT healthcare workers.
2. INTERRUPT the virus.
3. MAINTAIN existing healthcare services while surging their capacity.
4. SHIELD the most vulnerable from socioeconomic shocks[11].

Challenges

The contribution of community health workers is praiseworthy but sadly there are significant gaps leaving community health workers vulnerable. According to a study, public health workers made huge efforts with personal and family sacrifices during the COVID-19 control and prevention response. Most of the workers reported experiencing depression and anxiety and poor self-rated health [12]. The most recent estimates suggest that there are around five million community health workers (CHWs) currently working worldwide. The WHO have forecasted a global shortage of 18 million trained health professionals by 2030 [13].

Community health workers also faced a range of other challenges, including health system issues such as disrupted medical supply chains, insufficient staff and high workloads and a particular difficulty for female community health workers who were balancing domestic responsibilities[14].

Public health workers encounter multiple resource deficiencies in their work. Resource

shortage was reported for protective gear, own skills, manpower, funding and reagents. Public health workers also encountered difficulties in data processing in their work which were: excessive documentation, cumbersome and time-consuming data filling, work accounts, information and inconvenient transmission of documents[15].

Summary

In conclusion, it is critical to understand the experiences of the public health workers, as they serve as a backbone for pandemic control. The probability of a pandemic with similar impact to COVID-19 is about 2% in any year. This means that the probability of experiencing a pandemic similar to COVID-19 in one's lifetime is about 38%[16]. The need for a strong army of public health workers to combat viral outbreaks is clear. Governments and organizations around the world must invest in public health infrastructure, training, and education to ensure that we have the resources and personnel necessary to effectively prevent and control the spread of infectious diseases. One of the most striking wake-up statements in more than a century is COVID-19. It should compel us to start deliberating as a society about how to live in more thoughtful and imaginative harmony with nature, even as we prepare for its inescapable and unavoidable surprises.

References

1. Martini M, Gazzaniga V, Bragazzi NL, Barberis I. The Spanish Influenza Pandemic: A lesson from history 100 years after 1918. *J Prev Med Hyg.* 2019;60(1):E64–7.
2. Dikid T, Jain SK, Sharma A, Kumar A, Narain JP. Emerging & re-emerging infections in India: An overview. *Indian J Med Res.* 2013;138(JUL 2013):19–31.
3. Jha P, Deshmukh Y, Tumble C, Suraweera W, Bhowmick A, Sharma S, et al. COVID mortality in India: National survey data and health facility deaths. *Science (80-).* 2022;375 (6581):667–71.
4. Piret J, Boivin G. Pandemics Throughout History. *Front Microbiol.* 2021;11(January).

5. Woolhouse MEJ, Gowtage-Sequeria S. Host range and emerging and reemerging pathogens. *Emerg Infect Dis*. 2005;11(12):1842–7.
6. Betty Pfefferbaum, M.D., J.D., and Carol S. North, M.D. MPE. *Engla, Journal - 2010 - New engla nd journal. N Engl J Med* [Internet]. 2020;69(1):1–2. Available from: nejm.org
7. Witmer A, Seifer SD, Finocchio L, Leslie J, O’Neil EH. Community health workers: integral members of the health care work force. *Am J Public Health*. 1995;85(8):1055–8.
8. Bhaumik S, Moola S, Tyagi J, Nambiar D, Kakoti M. Community health workers for pandemic response: A rapid evidence synthesis. *BMJ Glob Heal*. 2020;5(6):1–20.
9. Kumari R. Geospatial Technology , Public health and its Vulnerability Assessment. 2022;6(2):1–7.
10. Nayahangan LJ, Konge L, Russell L, Andersen S. Training and education of healthcare workers during viral epidemics: A systematic review. *BMJ Open*. 2021;11(5).
11. Ballard M, Bancroft E, Nesbit J, Johnson A, Holeman I, Foth J, et al. Prioritising the role of community health workers in the COVID-19 response. *BMJ Glob Heal*. 2020;5(6):1–7.
12. Li J, Xu J, Zhou H, You H, Wang X, Li Y, et al. Working conditions and health status of 6,317 front line public health workers across five provinces in China during the COVID-19 epidemic: a cross-sectional study. *BMC Public Health*. 2021;21(1):1–14.
13. Donovan JO, Donovan CO, Kuhn I, Sachs SE, Winters N. Ongoing training of community health workers in low-income and middle-income countries: a systematic scoping review of the literature. 2018;
14. Salve S, Raven J, Das P, Srinivasan S, Khaled A, Hayee M, et al. Community health workers and Covid-19: Cross-country evidence on their roles, experiences, challenges and adaptive strategies. *PLOS Glob Public Heal* [Internet]. 2023;3(1):e0001447. Available from: <http://dx.doi.org/10.1371/journal.pgph.0001447>
15. Du Z, You H, Zhou H, Wang X, Xu J, Li Y, et al. Difficulties encountered by public health workers in COVID-19 outbreak: a cross-sectional study based on five provinces. *BMC Health Serv Res*. 2021;21(1):656.
16. Marani M, Katul GG, Pan WK, Parolari AJ. Intensity and frequency of extreme novel epidemics. *Proc Natl Acad Sci U S A*. 2021;118(35):0–3.

