Open Peer Review on Qeios

Public Health Assurance in the COVID-19 Era: Current Challenges and Future Prospects

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Funding: The author(s) received no specific funding for this work.

Potential competing interests: The author(s) declared that no potential competing interests exist.

Abstract

If there is no any other time the subject of public health assurance should be discussed and taken more seriously, it is now, the COVID-19 ERA. The sudden outbreak of the COVID-19 pandemic in Wuhan province of China in December, 2019 has had tremendous impacts on various aspects of life across the world, including the health, economy, education and scientific research. Historically, public health has been a silver bullet for combating infectious diseases. The COVID-19 pandemic however, has further brought the need for public health assurance under global spotlight. Public Health Assurance covers those activities that deal with making sure people's health needs are safely and effectively met. Key areas of public health assurance include: 1) Enforcing laws and regulations that protect environmental health and ensure safety, 2) Linking people to needed environmental health services and assure the provision of environmental health services when otherwise unavailable, 3) Assuring a competent environmental health workforce, 4) Evaluating effectiveness, accessibility, and quality of personal and population-based environmental health services and 5) Researching for new insights and innovative solutions to environmental health problems. Challenges facing public health assurance include: 1) Inability to adequately perform the crucial public health tasks of evaluation, policy creation, and service assurance, 2) haphazard decision-making without the appropriate information and understanding, 3) Inequities in service provision and the advantages of public health, 4) Limitations on effective leadership, such as inadequate ties with the medical community and poor communication between the technical and political sides of decisions, inadequate creation of the knowledge required to address the full spectrum of public health demands, 6) Inadequate funding to support the delivery of public health services, and 7) public health workforce is understaffed and unequipped to meet the needs of local communities. COVID-19 has been and remains an unprecedented global crisis and public health systems have put tremendous efforts to withstand the pandemic with public health assurance.

Key Words: *COVID-19, Public Health Assurance, Challenges, Prospects*

Introduction

On 31st of December 2019, an outbreak of pneumonia with an unknown origin in Wuhan, Hubei Province, China was reported to the World Health Organization (WHO) (Chen *et al.,* 2020). The new coronavirus epidemic was deemed a public health emergency of international concern (PHEIC) by WHO on January 30, 2020 (Enitan *et al.,* 2020). On

February 11, 2020, the International Committee on Taxonomy of Viruses (ICTV) designated the virus as SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus-2 (Hu *et al.*, 2020), while the WHO designated the outbreak as Coronavirus Disease-2019 (COVID-19) (Sun et al., 2020). The first confirmed case of the Coronavirus in Africa was recorded in Egypt on February 14, 2020 (The Cable, 2020), while Nigeria announced its index case on 27th February, 2020 (NCDC, 2020). The WHO declared the outbreak a pandemic on March 11, 2020 (WHO, 2020a) and since then the virus has escalated to more than 220 countries and regions of the world. As of September 6, 2022, there were 603,164,436 confirmed cases of COVID-19 worldwide, including 6,482,338 fatalities (WHO, 2022b).

Coronaviruses are a large family of enveloped RNA viruses, some of which cause illness in people (e.g., common cold, severe acute respiratory syndrome [SARS], Middle East respiratory syndrome [MERS]), and others that circulate among mammals and birds (Anthony, 2017). Rarely, animal coronaviruses can spread to humans and subsequently spread between people, as was the case with SARS and MERS. SARS-CoV-2 belongs to the *Sarbecovirus* subgenus of the *Coronaviridae* family, and is the seventh coronavirus known to infect humans. The virus has been found to be similar to SARS-like coronaviruses from bats, but it is distinct from SARS-CoV and MERS-CoV (Lu *et al*., 2019; Hu *et al.,* 2020; Zhu *et al*., 2020).

The genetically related SARS-CoV, now known by some to be SARS-CoV-1, which produced a fatal near-pandemic in 2002–2003, served as the inspiration for the naming of SARS-CoV-2 (Ksiazek, 2003; Corman *et al.,* 2018). The genetic sequences of the later virus had never been discovered in either humans or animals before, until 2019 (Chen *et al.,* 2020).

If there is no any other time the subject of public health assurance should be discussed and taken more seriously, it is now, the COVID-19 ERA. The sudden outbreak of the COVID-19 pandemic in 2020 has had great impacts on various aspects of life across the world, including the economy, society, education and scientific research, affecting all strata of population (Wani, 2020). In particular, this once-in-a-century pandemic has brought public health, a discipline which was hardly known to the general public, under the spotlight (Ibeh *et al.,* 2020; Liang *et al*., 2020).

Historically, public health has been a silver bullet for combating infectious diseases, which were the main cause of human death in the past, and has made significant contributions to the victory of humankind against those deadly diseases ((Acheson, 1988; Tang, 2015). Technology-driven modern culture has pre-shaped our thinking on the responses to COVID-19. Lack of vaccine and treatment at the onset the pandemic exacerbated the situation (WHO, 2020a; Enitan *et al.,* 2020). However, the narrative has changed for the better. We now a have a safe and effective vaccine and therapeutics to combat the virus (Enitan *et al.,* 2021; 2022). A total of 12,540,061,501 vaccine doses have been administered as of September 4, 2022 (WHO, 2022b), in addition to several recommended therapeutics (WHO, 2022c).

The review takes a look at the current challenges and future prospects associated with public health assurance in the COVID-19 era.

Understanding public health and the need for public health assurance

In order to prevent disease, extend life, and promote health, society, organizations, public and private groups, and individuals must work together and make deliberate decisions. Public health today can be viewed as ‘the science and art of studying from a population or societal perspective and addressing the problems related to health, disease and health services by using population ion or societal means, with the ultimate goal of improving the health of the entire population (Acheson, 1988; Fleming, 2009).

The work that society as a whole does to ensure that people live and maintain healthy lives is known as public health (Institute of Medicine, 2003). Modern public health has two layers of meanings. The first is the health of all people (the public), especially the less privileged. This is the original intent of public health. The second is hygiene, which is a set of theories and methods developed in our past responses to infectious diseases (Tang, 2015). The development and implementation of public health guidance and assurance has raised important questions about the scope of health department mandates and federal authorities. An illustrative example is the use of face coverings, with evidence from natural experiments of mask mandates has helped avert a substantial number of COVID-19 cases and deaths (Lyu *et al.*, 2020).

The non-medical elements that affect health outcomes are referred to as social determinants of health (SDH). In addition to the larger group of factors and systems influencing the conditions of daily life, these are the circumstances in which people are born, develop, work, live, and age. These factors and systems include political systems, societal norms, social policies, economic policies and systems, and development objectives. Health inequalities, or the unfair and preventable variations in health status seen within and between countries, are significantly influenced by SDH. Health and sickness follow a social gradient across nations of all income levels: the worse one's socioeconomic standing, the worse one's health. The following social determinants of health can have both good and bad effects on health equity: Education, job uncertainty, income and social insecurity, housing, facilities, working circumstances, food insecurity nondiscrimination and social inclusion, early childhood development, structural conflict, accessibility to decent and affordable healthcare services. According to research, social factors may have a greater impact on a person's health than medical treatment or lifestyle decisions (WHO, 2020d). The five (5) main social determinants of health are summarized in Figure 1.

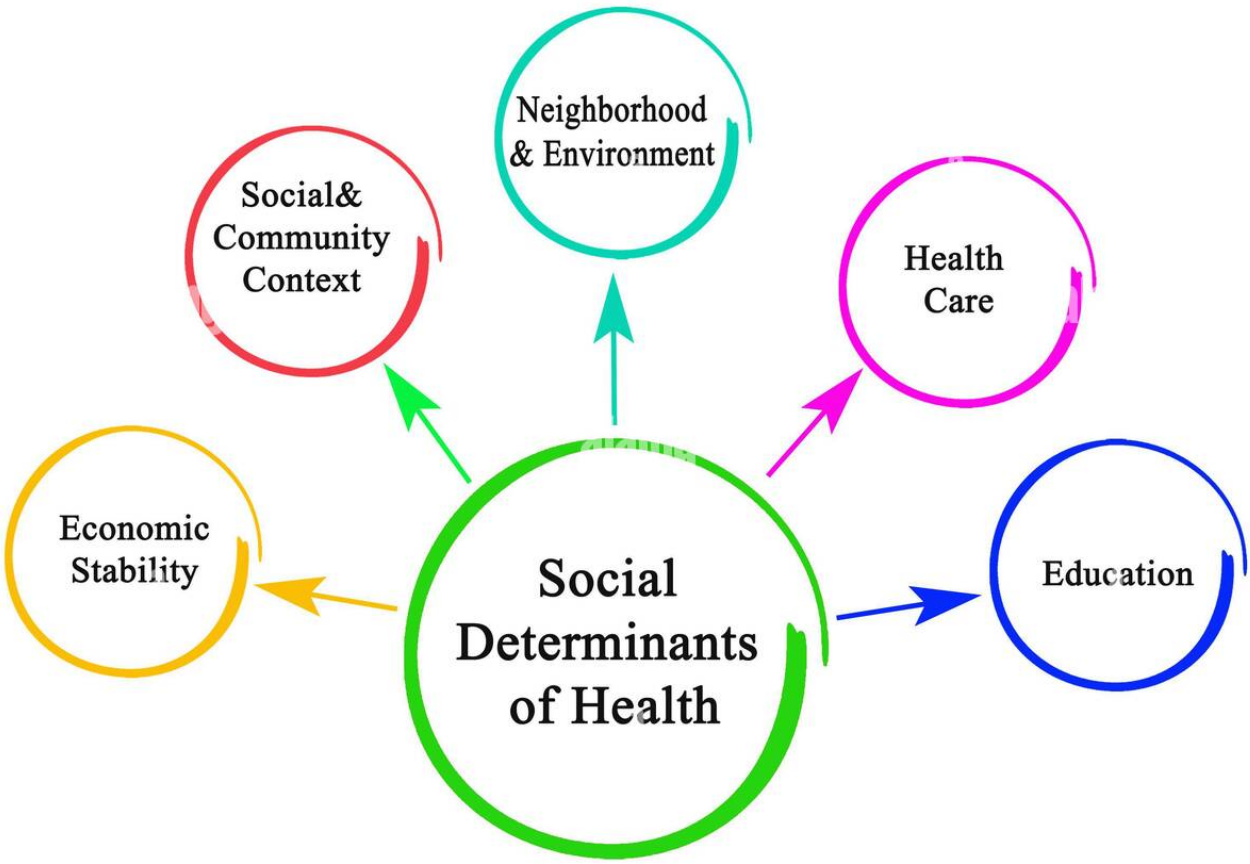

Figure 1: Chart showing the social determinants of health.

Source: *https://www.alamy.com/social-determinants-of-health-image337104563.html*

Public health assurance covers those activities that deal with making sure people's health needs are safely and effectively met. Key areas of public health assurance include: 1) Enforcing laws and regulations that protect environmental health and ensure safety, 2) Linking people to needed environmental health services and assure the provision of environmental health services when otherwise unavailable, 3) Assuring a competent environmental health workforce, 4) Evaluating effectiveness, accessibility, and quality of personal and population-based environmental health services and 5) Researching for new insights and innovative solutions to environmental health problems (CDC, 2020).

Spectrum of Public Health Assurance

The spectrum of public health includes some strategies designed to address complex, significant public health problems. These strategies take into account the multiple determinants of community health and can be used to develop a comprehensive approach to current public health issues. They include: 1) Influencing policy and legislation, 2) Mobilizing neighborhoods and communities, 3) Changing organizational practices, 4) Fostering coalitions and networks, 5) Educating healthcare providers, 6) Promoting community education, 7) Strengthening individual knowledge and skills, 8) Assurance access to quality health care (PHAB,2020).

The Challenges of Public Health Assurance in the COVID-19 Era

The systematic identification of health issues and the creation of solutions are necessary for carrying out the public health mission and interventions. Some identifiable challenges or barriers to effective public health intervention and assurance include: 1) disagreement over the mission's specifics in terms of public health; 2) inadequate ability to perform evaluation, policy development, and service assurance—three crucial public health activities; 4) Inequities in public health service provision; 5) Limitations on effective leadership, such as inadequate ties with the medical community and poor communication between the technical and political sides of decisions; 6) Organizational disintegration or engulfment; lack of ties between the various levels of government; 8) inadequate creation of the knowledge required across the whole spectrum of public health demands; 9) Unfavorable public perception of public health prevents required assistance; and 10) Special issues that unreasonably restrict the financial resources available for public health or insufficient money to support the provision of services in this area (Tang, 2021). All these are summarized in Figures 2 and 3.

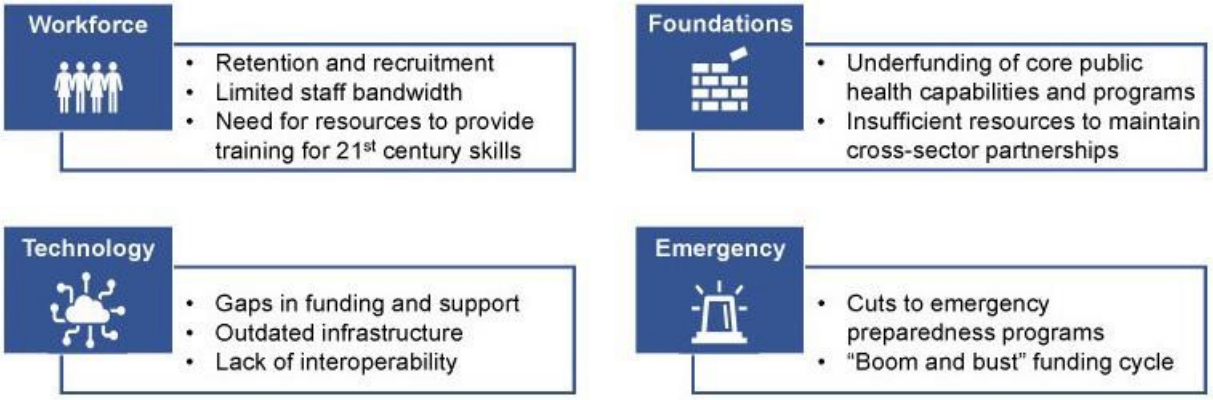

Figure 2: Chart showing pre-pandemic public health challenges (CDC, 2020).

Figure 3: Chart showing key public health challenges during COVID-19 pandemic (CDC, 2020).

To be ahead of epidemics and endemics, we need to focus on the following problems: 1) Health of whole life span, 2) Environmental health and to build the environment, 3) Integrate health into strategies (Li *et al.,* 2021), 4) Develop

community partnership and relationship, 5) Guide the identification and allocation of resources for population health (Resnick *et al.,* 2017), 6) Transform public health funding and affirming the mandate for public health (Institute of Medicine, 2012; DeSalvo *et al.,* 2019) and 7) Invest in leadership and workforce development (CDC, 2020).

Future prospects of public health assurance

To assure public health in the COVID-19 era and beyond, the followings are crucial:

- Development of public health frameworks, including implementation and enforcement (PHAB, 2020).
- Emergency preparedness and response.
- Assessment and surveillance in testing and tracing capacity.
- Modernizing data and IT capabilities (Blue Shield of California, 2020).
- Effective communication and education of the policy makers and the public.
- Development of community partnership and relationship.
- Help guide the identification and allocation of resources for population health (Resnick*et al.,* 2017; PHNCI, 2020).
- Transforming public health funding and affirming the mandate for public health (Institute of Medicine, 2012; DeSalvo*et al.,* 2019).
- Investing in leadership and workforce development (CDC, 2020).

Development of a complex system of governance comprised of a diverse set of local, state, territorial, tribal, and federal agencies and authorities, all of whom will collaborate in advancing the state of public health response and assurance (PHNIC, 2018). Policymakers and public health leaders should develop various tools to achieve alignment on the public health mandate and public health governance, from accreditation programs to frameworks outlining the services and capabilities for all health departments (PHAB, 2020) and support implementation and enforcement. Emergency preparedness and response, and also in data collection and reporting is very important. Assessment and surveillance in testing and tracing capacity must be sustained. Beyond direct infection control, health departments should also adapt to meet other health and social needs of their population. In many countries, local health departments act as both a service coordinator (e.g., for social services) and provider (e.g., for primary and preventive care services), and due to shelter-in-place restrictions, had to adapt their operations to virtual modalities (Dearinger, 2020). To help guide the identification and allocation of resources for population health, the Public Health Leadership Forum developed the Foundational Public Health Services framework, which aligns with Public Health Accreditation Board's (PHAB) Standards & Measures (Resnick *et al.,* 2017; PHNCI, 2016; PHNCI, 2020). Government at all levels must continue to promote structural alignment across the public health sector and support partnerships and community engagement to be capable of delivering a standard set of evidence-based services to their communities (CDC, 2020).

Way Forward

To sustain the victory won against the virus, the followings are hereby recommended:

1. Strengthening health security against health emergencies and other threats.
2. Strengthening effective, accessible, resilient and innovative health systems.
3. Reducing the impact of non-communicable diseases.
4. Promoting sustainable food systems and health
5. Promoting health cooperation amongst local and international communities

Conclusion

COVID-19 has been and remains an unprecedented global crisis and public health systems have put up tremendous efforts to withstand the pandemic with public health assurance. This crisis transformed challenges and policy responses into numerous top priority prospects that have already become a tangible reality. There has been an enhancement of common goals and objectives on how to deal with the COVID-19 pandemic in order to keep the societies healthy and to actualize public health assurance. It is obviously acknowledged that the pandemic needs to be handled with consciousness and responsibility by all stakeholders at all levels. Many initiatives have been put in place in order to rediscover the values of what health systems hold in common. The goal to minimize deaths and the spread of the disease remains health systems' top priority. Therefore, it can be concluded that global mobilization to fight the health consequences of COVID-19 and foster assurance in public health has been impressive.

Competing Interests

The authors have declared that no competing interests exist.

Funding

This compilation is a review article written by its authors and required no substantial funding to be stated.

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