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# The Role of Public Health in Reducing Health Risks

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## ABSTRACT

Public health plays an important role in reducing health risks by focusing on the prevention of diseases and the promotion of well-being across populations. This paper explores the multi-dimensional nature of public health interventions that operate at individual, community, and policy levels. By emphasizing a data-driven approach, public health seeks to address emerging health challenges such as infectious diseases, lifestyle-related health risks, and environmental hazards. It also highlights strategies like vaccination, health education, and regulatory reforms that have successfully minimized health risks. Case studies on the effectiveness of various interventions demonstrate the importance of collaboration across sectors to ensure long-term success. The future of public health lies in adapting to new challenges while promoting equity and sustainability to improve global health outcomes.

**Keywords:** Public health, Health risks, Disease prevention, Vaccination.

## INTRODUCTION

Public health is involved in the science and art of avoiding medical conditions and promoting overall health, energy, and the environment of people. A facility of public health practitioners prepared in major public health standards, particularly from the perspective of international health, along with drawing from numerous different divisions to influence a group of people for wellness and the reduction of poor health odds, could enhance health outcomes within an individual community. Numerous degrees of the societal framework, for example, isolated systems, state-level plans, administration and guidelines, normal ethical cultures, medicines, heritage, and the economic framework similarly affect the wellness of an individual, a business, an organization, a neighborhood, or other inhabitants. A structure in which a person and the many disparities of communal groups could be permitted to maintain their population, stay, and perform is what public health aims to achieve. As the public health consequences of troubles are by no means isomorphic due to numerous factors, a variety of population zones or subdivisions must have the capacity to independently recognize and address health risks in their population. The significant and time-tested feature of public health is the contributing factor for many positive health improvements, through international vaccination programs and improved immunization rates, protection as well as supporting infrastructure, and ample health education provided by public health nurses who serve a diverse set of individuals daily. The wellness industry has hidden reasons and contexts that make it different from standard misconceptions. This information would aid in acknowledging what, as community workers, we could invest time and engagement in. Taking the information beyond "wellness is beneficial" will garner considerable contributions to alter many negative consequences. The more information available about society, the greater the likelihood of presenting a varied perspective on what wellness is and the reasons why society must strive to be as proactive as possible when it comes to wellness [1, 2].

### Understanding Public Health and Its Importance

At its core, public health is responsible for preventing people from getting sick by controlling or eradicating diseases. This goal requires a multi-pronged strategy; public health encompasses activities such as epidemiology, health education and promotion, and health administration. Public health operates

in three broad areas—direct, population-based health services for individuals, community or environmental interventions, and public health policy [3, 4]. Public health is, above any other definition, a data-driven discipline. Its primary goal is to identify emerging health problems and how they can best be rectified, but also to take advantage of information from the past to enable better decision-making now. Recent global trends, such as the rise in anti-vaccination advocates or private and public debates over the safety of e-cigarettes, have illustrated that informed community debate is a major component of public health interventions. It is often said that public health practice is the intersection of the social and environmental sciences with the biological mechanisms by which disease occurs. The well-being of the public is a multi-faceted issue—public health must be an interdisciplinary, team-based approach, since outside of public health, few trained professionals can offer a comprehensive approach. But public health must also be multi-sectoral, requiring contributions from outside the medical establishment to prevent future health problems. Throughout history, public health has worked across seven areas of reform by proposing interventions and then analyzing their results before creating new policies for improvement [5, 6].

### **Identifying Major Health Risks**

The cause of ill health and injury, and thus disability and premature mortality, spans the social and medical dimensions of human life. Like physicians who identify patient risk factors, public health professionals, when working within a community-oriented approach, employ a variety of methods to identify which health risks occur in certain populations. As will be detailed below, many of the factors that place people at risk are associated with a range of personal choices or lifestyle patterns, environmental influences, or societal conditions [7, 8]. There is an ever-growing list of potentially modifiable or eliminable health risk factors, tracing the gamut of human activity. Because of the parallel experiences of health agencies across the nation, most of these data are national or international in scope. Although both developing and developed countries may have entities attempting to gather similar data, only the wealthier nations can afford the long-term health surveillance systems necessary to maintain useful vital statistics and disease surveillance and control measures [9, 10].

### **Strategies and Interventions in Public Health**

Public health interventions and strategies involve dealing with known health risks. These responses can be preventive or curative, focusing on the primary (addressing a cause before it becomes an illness), secondary (early detection and improving negative health outcomes), and tertiary (reducing the impact of an illness) levels of prevention, and aim to achieve the common good across populations. Preventive interventions are commonly aimed at health promotion, specific protection, and environmental change. There is an increasing emphasis on population health approaches in public health and primary health care because a greater proportion of health problems stem from the policies and practices that make populations either healthy or unhealthy [11, 12]. - Public health education campaigns, often aimed at changing behaviors - Immunization/vaccination programs - Providing 'safer' environments - Laws and regulations aimed at reducing environmental health risks - Economic costs designed to encourage or discourage people from engaging in certain behaviors - Engagement with and use of academic research [13, 14]. Over time, many models and frameworks have been developed to guide public health interventions. Different levels of evidence are used to evaluate the effectiveness of interventions; however, the decision to use any of these will depend on many factors, including time, available resources, and relevance to the setting/context. Some strategies, such as immunization, are effective in reducing the risk of these diseases. However, some interventions are evidence-based because there has been experience or positive outcomes in trialing them, and/or they have operational components of a plan highlighting what needs to be done and how over time. The implementation of strategies can be hampered by many difficulties; one of the challenges in public health intervention is to bring enough resources to bear on target problems. The long-term effectiveness of public health interventions is common in the evaluation and funding of public health obligations [15, 16]. Public health is the science and art of preventing communal disease, promoting health policies, monitoring, and elaborating strategies and health services to help communities with various public health interventions. Public health encompasses a range of interactions over five levels of the health system – individual/client, provider, organizational, system, and environment. It notes a range of challenges that determine the success of these interventions [17, 18].

### **Case Studies and Success Stories**

In presenting these case studies, it is worth noting that no public health intervention in the modern era has effectively eliminated these various health risks, with the notable exception of tuberculosis control

and their associated mortality. Nevertheless, these case studies offer examples of various types of public health interventions and effective public health efforts. The majority of these and other types of public health interventions tend to be comprehensive in their approach, emphasizing fundamental determinants of health, building upon basic communicable and chronic disease prevention principles, and enabling and enlisting fundamental collaborative community and public health efforts [19, 20]. The timing and type of intervention to prove a cause-and-effect relationship between exposure and specific outcomes is a basic concept in epidemiology [21, 3].

### Future Directions

Public health practice and policy can mitigate the risks to health that communities, especially those at the margins, continue to face due to environmental degradation. The present review has examined the meaning of risk in public health, identified lessons from the past, discussed current health and environmental impacts, and examined the strategies used to reduce relevant health risks. It has identified the need for continuing research and surveillance to inform public health policy, the importance of action across the multisectoral landscape, and the need to take renewed account of present-day issues. It also highlighted the growing recognition of the essential contribution of public health to action for equity and sustainability locally and globally. Practical change is the sum of a great many individual and collective steps: the reviews canvassed here reflect these realities. They offer a rich and diverse array of findings and experiences; our challenge lies first in coming to understand what they tell us, and then in finding the innovation that we can use to adapt and respond. Public health's work to prevent and reduce the health risks associated with environmental degradation has a long and valued history. In years to come, it will continue to evolve as public health experts deal with the complex challenges of health, care, and a changing planet. The focus will continue to be on the health of our societies, the settings in which we work, live, and play, and our capacity to be as healthy as we can be, and able to move our futures in much more positive directions. The health sector's work with others to enhance the well-being of our societies will see greater intersectoral action where the health sector participates more and more in the process of governance across the executive government and between the parliament, executive government, and the judiciary. There are thoughtful and engaged citizens who will make change happen. Public health still matters in an era of significant change to our societies, and we are hugely important to achieve the society and planet we want to see. Thank you for your engagement in this urgent task [22, 23].

### CONCLUSION

Public health is an essential component of global efforts to minimize health risks and increase population well-being. Public health methods, such as immunization programs, health education, and environmental improvements, have shown great success in managing both chronic and infectious diseases. Public health requires an interdisciplinary and multi-sectoral strategy that addresses health concerns holistically, taking into account social, environmental, and economic variables. Looking ahead, public health will evolve to address rising health concerns, environmental changes, and disparities in healthcare access. By encouraging cross-sector collaboration, public health practitioners may empower communities to take proactive steps to protect their health, resulting in a more equitable and sustainable global health landscape.

### REFERENCES

1. Nundy S, Cooper LA, Mate KS. The quintuple aim for health care improvement: a new imperative to advance health equity. *Jama*. 2022 Feb 8;327(6):521-2.
2. Wong AS, Kohler JC. Social capital and public health: responding to the COVID-19 pandemic. *Globalization and health*. 2020 Sep 25;16(1):88.
3. Breilh J. *Critical epidemiology and the people's health*. Oxford University Press, USA; 2021 Jan 15.
4. Wilder-Smith A, Osman S. Public health emergencies of international concern: a historic overview. *Journal of travel medicine*. 2020 Dec;27(8):taaa227.
5. Mwitondi KS, Said RA. A framework for data-driven solutions with COVID-19 illustrations. *Data Science Journal*. 2021 Nov 18;20.
6. Srivastava A, Jha S. Data-driven machine learning: A new approach to process and utilize biomedical data. In *Predictive Modeling in Biomedical Data Mining and Analysis 2022* Jan 1 (pp. 225-252). Academic Press. [nih.gov](http://nih.gov)
7. Chen J, Wang Y. Social media use for health purposes: systematic review. *Journal of medical Internet research*. 2021 May 12;23(5):e17917.

8. Anwar A, Malik M, Raees V, Anwar A. Role of mass media and public health communications in the COVID-19 pandemic. *Cureus*. 2020 Sep;12(9).
9. Woolhandler S, Himmelstein DU, Ahmed S, Bailey Z, Bassett MT, Bird M, Bor J, Bor D, Carrasquillo O, Chowkwanyun M, Dickman SL. Public policy and health in the Trump era. *The Lancet*. 2021 Feb 20;397(10275):705-53. [landofsixpeoples.com](http://landofsixpeoples.com)
10. Nunn R, Parsons J, Shambaugh J. A dozen facts about the economics of the US healthcare system. The Hamilton Project, Economic Facts. 2020 Mar 10.
11. Herlitz L, MacIntyre H, Osborn T, Bonell C. The sustainability of public health interventions in schools: a systematic review. *Implementation science*. 2020 Dec;15:1-28.
12. Budreviciute A, Damiati S, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, Katileviciute A, Khoja S, Kodzius R. Management and prevention strategies for non-communicable diseases (NCDs) and their risk factors. *Frontiers in public health*. 2020 Nov 26;8:574111. [frontiersin.org](http://frontiersin.org)
13. Janakiram C, Dye BA. A public health approach for prevention of periodontal disease. *Periodontology 2000*. 2020 Oct;84(1):202-14.
14. Sharma M. Theoretical foundations of health education and health promotion. Jones & Bartlett Learning; 2021 Jul 14.
15. Wagner A, Weinberger B. Vaccines to prevent infectious diseases in the older population: immunological challenges and future perspectives. *Frontiers in immunology*. 2020 Apr 23;11:717.
16. Moghadas SM, Vilches TN, Zhang K, Wells CR, Shoukat A, Singer BH, Meyers LA, Neuzil KM, Langley JM, Fitzpatrick MC, Galvani AP. The impact of vaccination on coronavirus disease 2019 (COVID-19) outbreaks in the United States. *Clinical Infectious Diseases*. 2021 Dec 15;73(12):2257-64. [oup.com](http://oup.com)
17. Richardson ET. Epidemic illusions: on the coloniality of global public health. MIT Press; 2020 Dec 22.
18. Goldsteen RL, Goldsteen K, Dwelle T. Introduction to public health: promises and practices. 2024. [researchgate.net](http://researchgate.net)
19. Ogilvie D, Adams J, Bauman A, Gregg EW, Panter J, Siegel KR, Wareham NJ, White M. Using natural experimental studies to guide public health action: turning the evidence-based medicine paradigm on its head. *J Epidemiol Community Health*. 2020 Feb 1;74(2):203-8. [bmj.com](http://bmj.com)
20. Filip R, Gheorghita Puscaselu R, Anchidin-Norocel L, Dimian M, Savage WK. Global challenges to public health care systems during the COVID-19 pandemic: a review of pandemic measures and problems. *Journal of personalized medicine*. 2022 Aug 7;12(8):1295. [mdpi.com](http://mdpi.com)
21. Merrill RM. Introduction to epidemiology. Jones & Bartlett Learning; 2024 Feb 15.
22. Lenzen M, Malik A, Li M, Fry J, Weisz H, Pichler PP, Chaves LS, Capon A, Pencheon D. The environmental footprint of health care: a global assessment. *The Lancet Planetary Health*. 2020 Jul 1;4(7):e271-9. [thelancet.com](http://thelancet.com)
23. Murphy E, King EA. Environmental noise pollution: Noise mapping, public health, and policy. Elsevier; 2022 Apr 9.

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