REVIEW ARTICLE

Role of Central Health Education Bureau in One Health: National & Global Perspectives

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Abstract

The One Health approach, that integrates human, animal, and environmental health, is crucial for strengthening national and global health security. The present manuscript highlights some of the key initiatives undertaken in India in this domain and explores the opportunities for future action. Further, it underscores the importance of information, education and communication materials, training programs for diverse stakeholders, and community outreach activities, in enhancing knowledge, attitude and practices among the public. The manuscript also examines potential areas to which the Central Health Education Bureau can support and contribute to the One Health approach through targeted interventions, interdisciplinary collaboration, and evidence-based research. Additionally, it emphasizes the importance of effective risk communication and community engagement in managing health risks and improving preparedness.

Keywords

One Health approach, Central Health Education Bureau, Risk communication, Community engagement, capacity building, behavioural research

Introduction

The human population is more than three times greater than in the mid-20th Century, with more than 8 billion in 2022. This rapid increase in population has resulted in more people living in close contact with wildlife, livestock, and pets, which could potentially increase the opportunities for zoonotic diseases that transmit between animals and people. (1,2) Various human activities and stressed environmental factors have opened new avenues for diseases to emerge and spread. The stressors include international trade, livestock farming, large scale conversion of land to agriculture, urbanization, natural resource extraction, climate change, deforestation and encroachment of humans into wild areas. (3-7) All these factors contribute to the rise of zoonotic diseases. While more than 60% of known infectious

diseases are zoonotic in origin, approximately 75% of new diseases originate from wild or domestic animals. More than two billion people get affected by zoonotic diseases globally each year, causing approximately 2 million deaths and a significant economic loses. (8)

The spillover of zoonotic pathogens from other species to humans has the potential to cause epidemics and global pandemics, as the world witnessed during COVID- 19. Considering the complexity and multifactorial, transboundary nature of zoonotic diseases, purely medical, veterinary, or ecological management is unlikely to establish sustainable mitigation strategies. This was evident during covid 19 pandemic, that emphasized the need for a global framework for improved surveillance and a more holistic and integrated system. (3,9) By addressing the connections between human, animal and environmental health, One Health is seen as a transformative approach to improved global health. (10) The present manuscript aims to:

- Highlight the key initiatives in India related to One Health
- Explore future actions that can be undertaken to strengthen One Health approach

The One Health approach:

Between animal and human medicine
there are no dividing lines—nor should there be.
-Rudolf Virchow, 1856

The One Health approach reiterates that the health of humans, animals, and environment is closely linked and interdependent. This approach involves multiple sectors, disciplines, and communities as stakeholders to tackle threats related to health and ecosystems. Simultaneously, it also addresses the collective need for healthy food, water, air and energy, while taking action on climate change and contributing to sustainable development. (9) One Health can help in addressing the full spectrum of disease control – from prevention to detection, preparedness, response and management – by crosslinking humans, animals and the environment. (10)

At the global level, various initiatives have adopted the One Health approach to meet SDG and improve global health security. The quadripartite organizations including World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO), United Nations Environmental Programme (UNEP) and the World Organization for Animal Health (WOAH)) jointly launched 'One Health joint plan of action, in October 2022 to strengthen and address health concerns at the human- animal –plant- environment interface. Additionally, the action plan also focused on developing effective strategies to address emerging and re-emerging threats of zoonotic diseases. Additionally, the One Health High-Level Expert Panel (OHHLEP) was established to provide scientific advice to the quadripartite partners on One Health priority settings, policies and strategies. (11)

Recognizing the need for a coordinated approach, the Government of India initiated the 'National One Health Mission' (NOHM) to strengthen coordinated surveillance, diagnostics and outbreak response. The goal of NOHM is to build an integrated disease control and pandemic preparedness system by bringing human, animal and environmental sectors together for better health outcomes, improved productivity and conservation of biodiversity. (12) By integrating more than 13 government departments and various ministries, including health, animal husbandry, and environment NOHM aims to address zoonotic diseases, antimicrobial resistance, and pandemic preparedness, focusing on preventive and integrated strategies. (13) Under the Ministry of Health and Family Welfare, National Centre for Disease Control, and Indian Council of Medical Research (ICMR) are the key organizations to coordinate the activities of the mission in the country, along with various recognized institutions and organizations under other ministries. To further strengthen the country's One Health approach an independent institute, 'The National Institute of One Health' was also established. (14)

Although significant milestones have been achieved in the field of one health approach,

India, like any other developing countries, often faces multiple implementation challenges. Published literature has highlighted that lack of knowledge and awareness as the biggest weakness in developing countries, including India. Additionally, training and capacity building programs for health workers held in the country are often inadequate considering the large population that needs to be catered to. It was also reported that a significant research and evidence gap exists in the country, as there are few studies solely focused on multi-disciplinary One Health research. (14)

This highlights the need for strengthened mechanisms for awareness generation, training and capacity building programs. The Central Health Education Bureau (CHEB), being an apex organization for health education, under the Directorate General of Health Services, Ministry of Health and Family Welfare, can contribute immensely in disseminating health information, conducting capacity building programs and enhancing community engagement across the country by collaborative efforts with various sectors.

Role of CHEB in strengthening One Health approach: The way forward

Through its key focus areas including awareness generation, capacity building, behavioural research, and community outreach activities, CHEB can play a vital role in facilitating the preventive and promotive aspect of One Health approach.

Promoting One Health through Targeted Awareness Initiatives:

Awareness generation is an important component in establishing and strengthening the One Health approach, as it promotes understanding and collaboration among multiple stakeholders. (10) Activities such as health talks and IEC materials including posters, charts, Infographics and digital content on preventive and preparedness mechanisms can significantly contribute to the country's One Health journey. IEC materials tailored to different target groups can serve as reference tools to reinforce the key One Health concepts in their respective domain. Awareness can also be enhanced utilizing interpersonal, group and mass communication modalities. These initiatives would not only enhance awareness but also encourage critical thinking and active participation by the target population.

Capacity Building for the One Health approach:

To facilitate the development of adequately trained manpower, regular capacity-building training programs are essential. These may range from orientation and sensitization sessions to skill-based modular training programs designed to enhance the practical skill of the target groups. Such training initiatives can help in sensitizing the participants to the One Health approach, preventive and promotive practices, significance of intersectoral coordination, the importance of early reporting, and preparedness aspects.

Additionally, internship training and fellowship programs for medical and nonmedical post graduate students can be developed, emphasizing on skill development and hands-on experience in One Health activities.

Along with these efforts, the development of short and long-term courses, specifically designed within the ambit of One Health framework would be highly beneficial. These courses can be tailored to the specific needs of a diverse range of professionals including medical and public health professionals, veterinary practitioners, zoo personnel, and other stakeholders involved in the One Health approach. The concept of risk communication, specific to the One Health approach, can be emphasized within these training and capacity building initiatives to create a workforce equipped with effective health risk communication skills.

Community Engagement for One Health:

Community engagement serves as an effective platform to interact and engage with diverse groups (15) ranging from the general public to high-risk populations, including animal handlers and wet market personnel. It provides an opportunity to address myths and misconceptions, counter misinformation and provide information on best preventive and promotive practices, thereby strengthening preparedness for the effective implementation

of One Health strategies. Further, community engagement fosters social cohesion and a sense of ownership that sustain positive behavioural change within the communities.

Behavioural Research on One Health Approach:

Focused research initiatives can play a significant role in strengthening the One Health approach. Studies exploring the knowledge, attitude and practices of communities on various aspects related to One Health can serve as a reference for developing targeted intervention and communication strategies tailored to the specific population groups. Collaborative research that brings together expertise from human health, animal health, and environmental sectors, enables a multidisciplinary approach for achieving the true spirit of the One Health concept. Systematic evaluation of ongoing One Health programs and activities to assess their efficacy and impact is equally important in identifying best practices and address implementation challenges. Evidence-based research can also strengthen risk communication strategies, enhance public health awareness, and promote timely preventive actions. Overall, research in various One Health aspects would pave the way for improved preparedness, resilience, and coordinated actions for the betterment of the public.

From a national perspective, the Central Health Education Bureau can effectively support and contribute to the One Health approach through awareness generation, capacity building initiatives, and behavioural research, while at the global level, it can contribute by sharing the best practices in health education, risk communication and community engagement based on its experiences from both independent and collaborative efforts. Further, it can assist in exchanging knowledge and disseminating IEC and risk communication strategies across the globe, through collaboration with international agencies, adhering to the Government protocol. This initiative would support learning across borders and strengthen the well-coordinated international response to public health challenges under the One Health approach.

Conclusion

To conclude, this article outlines various initiatives that may be taken through CHEB to strengthen the One Health approach. Established under the recommendations of the Bhore Committee and the Planning Commission, with a mandate to promote health and wellbeing, CHEB is well positioned to support the implementation of One Health initiatives at the national as well as global level. Together, these efforts would help in creating a population that is well informed, better prepared, and better coordinated to deal with any public health events.

Authors Contribution

GS: Conceptualization, design; manuscript writing, editing, and review. DAK: Literature search, manuscript preparation.

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Conflict of Interest

There are no conflicts of interest.

Declaration Of Generative AI And AI Assisted Technologies In The Writing Process

The author has not used any generative AI/AI assisted technologies in the writing process.

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