

Global Health Emergency Workforce: Bridging the Health Security Gap and Implications for Pakistan

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The frequency and complexity of public health emergencies have increased dramatically over the past two decades. The Coronavirus Disease 2019 (COVID-19) pandemic, recurring outbreaks of emerging infectious diseases, climate-related disasters, humanitarian crises, and antimicrobial resistance have demonstrated that resilient health systems depend not only on infrastructure and technology but, more importantly, on a competent and rapidly deployable health workforce. In response to escalating health emergencies, the World Health Organization (WHO) has urged Asia-Pacific countries to strengthen emergency workforce capacity through sustained investment, multisectoral collaboration, and preparedness planning.¹ This is particularly important for low- and middle-income countries where emergencies can quickly overwhelm health systems.

Health crises increasingly occur alongside floods, heatwaves, earthquakes, displacement, and environmental challenges. WHO reports that many hazards are interconnected, creating cascading effects that intensify health risks and disrupt services. These complex emergencies require a workforce skilled not only in clinical care but also in emergency management, surveillance, logistics, risk communication, and coordination, making reliance on routine healthcare personnel alone insufficient. The COVID-19 pandemic exposed major weaknesses in global emergency workforce preparedness. Many countries struggled; even nations with advanced healthcare systems experienced burnout, workforce attrition, and disrupted essential services.² These lessons underscore that emergency preparedness should

not begin during a crisis; it must be embedded within routine health system strengthening.³

The concept of a health emergency workforce extends beyond physicians and nurses. It encompasses epidemiologists, laboratory scientists, emergency medical technicians, public health professionals, logisticians, environmental health specialists, mental health experts, risk communication officers, veterinarians, and community health workers. Each plays a critical role during emergencies, and effective response depends on their ability to function as an integrated multidisciplinary team. Investments in training, competency-based education, simulation exercises, and continuous professional development are therefore essential components of national preparedness strategies.

Strengthening the emergency workforce has become an urgent public health priority for countries like Pakistan. The country faces multiple recurring hazards, ranging from climate disasters like floods, earthquakes, and heatwaves, to persistent health threats such as dengue, tuberculosis, polio, antimicrobial resistance, and emerging zoonotic diseases. Climate change further increases vulnerability by expanding the range of vector-borne diseases and intensifying extreme weather events.⁴ These challenges frequently occur simultaneously, placing immense pressure on healthcare services. Building a resilient emergency workforce capable of rapid mobilization and coordinated response should therefore become a national strategic objective rather than an emergency response afterthought.

Pakistan has demonstrated considerable emergency response capacity through the efforts of institutions such as the National Disaster Management Authority, Provincial Disaster Management Authorities, Rescue 1122, the armed forces, and numerous national and international humanitarian organizations. Their contributions during major disasters, including floods, earthquakes, and disease outbreaks, have been instrumental in saving lives and restoring essential

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services. However, the increasing frequency, scale, and complexity of emergencies have stretched these response systems across multiple regions simultaneously.

Preparedness also requires institutional reforms. International collaboration and regional partnerships further enhance surge capacity by facilitating technical assistance, shared expertise, and coordinated responses during transboundary crises.⁵ Digital surveillance platforms, telemedicine, electronic health records, artificial intelligence-assisted decision support, and mobile communication systems can substantially improve situational awareness and response coordination. However, technological innovation cannot substitute for a well-trained workforce. Investments in digital infrastructure must therefore be accompanied by capacity building.⁶

An equally important but frequently neglected dimension is workforce well-being. Health emergencies place extraordinary physical and psychological demands on healthcare workers. Protecting the emergency workforce requires ensuring occupational safety, adequate personal protective equipment, mental health support, fair compensation, and supportive working environments. A resilient health system cannot exist without a resilient workforce.⁷

The WHO's recent regional initiative aligns closely with the broader Health Emergency Preparedness, Response and Resilience (HEPR) Framework, which advocates integrated preparedness rather than disease-specific responses.⁸ This approach recognizes that investments made in emergency workforce development strengthen routine health services while simultaneously improving readiness for future crises. Ministries of health, finance, education, disaster management, and local governments must collaborate to establish sustainable financing mechanisms, expand workforce training programs, and develop policies that retain skilled professionals within national health systems.⁹

The WHO's call to strengthen emergency workforce capacities should serve as a catalyst for immediate action rather than another policy recommendation awaiting implementation. Future pandemics, climate-related disasters, and emerging infectious threats are inevitable. Whether countries can mitigate their impact will depend largely on the preparedness, competence, and resilience of the people standing on the front lines. Investing in emergency workforce capacity today is not merely preparation for future crises-it is an investment in

health security, national resilience, and the protection of future generations.

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