Quo vadis after COVID-19: a new path for global emergency preparedness?

World Health Day this year occurred against the backdrop of the pandemic of coronavirus disease 2019 (COVID-19), with widespread closure of interstate and international borders that had brought the world to a virtual standstill. As of 7 April, COVID-19 had affected more than 200 countries, territories and areas; more than four out of five people in the global workforce of 3.3 billion were affected by full or partial workplace closures; and schools were closed to almost 90% of the world’s 1.5 billion students. On 31 December 2019, the World Health Organization (WHO) Country Office for China was informed of cases of pneumonia of unknown aetiology detected in Wuhan, Hubei province. It took approximately 67 days (to 7 March) for the global number of reported cases of COVID-19 to surpass 100,000, 12 days (to 19 March) for the next 100,000 reported cases, 4 days (to 23 March) for another 100,000 cases, and within the next 2 days (by 25 March) another 100,000 cases had been reported. By 7 April, the numbers had continued to increase exponentially, to 1,279,722 confirmed cases and 72,614 deaths; more than 3,000 health workers had been infected, and many had died.

“The world is in the grip of the most severe health crisis of our time”

WHO Director-General Dr Tedros Adhanom Ghebreyesus 7 April 2020

The escalation of COVID-19 outbreaks into a global pandemic, with almost all affected Member States implementing travel restrictions and entry visa bans, shows that no country in the world is prepared for a novel high-threat pathogen or indeed any unknown health risk or threat. In the areas hardest hit to date, neither the hospitals nor the health workforces have been sufficient in number or level of equipment to manage the scale of the COVID-19 caseload. Shortages of personal protective equipment for health-care workers, ventilators for critical-care patients and even disinfectant for large-scale public health measures have been widespread, and efforts to replenish supplies have been thwarted by the closure of airports, seaports and land borders. The COVID-19 pandemic has also revealed that rapid response and/or emergency medical teams at national level are not adequately resourced or ready for mobilization. In the areas most affected to date, the number of deaths occurring per day has overwhelmed the capacities of mortuary and funeral services.

The speed, efficiency and reach of modern transport networks allow infectious diseases to spread faster than their incubation periods, generating effects of greater intensity than ever before. Even taking this into account, the capacity for seemingly small outbreaks to evolve quickly into epidemics and then a global pandemic is deeply concerning. Global and inter-country efforts in preparedness, such as the Global Health Security Agenda and strengthening the International Health Regulations, 2005 (IHR), had not scaled up fast enough to enable the capacities required to contain such a pandemic. The reasons are complex and have included delays in the timely detection of the novel pathogen, questionable transparency in the sharing of data and information during the earlier phases, and a lack of the openness and collaboration needed for effective prevention and control measures to be put in place. Nevertheless, extremely robust containment measures have been used for the first time in history in desperate attempts to break the transmission chain of the virus. These attempts to protect public safety – through sealing borders and locking down cities, provinces and even countries – have taken precedence over the pursuit of development goals. Also unparalleled to date have been the global solidarity with and support for the most affected areas and countries, including the provision of diagnostic equipment, human resources and technical expertise. However, it is notable that the actions of some States Parties to the IHR, have not reflected optimal use of some of the instrument’s articles, such as Articles 43, 44 and 56.

Time to question approaches and practices relating to public health emergencies

Countries with public health systems that struggle to cope with delivering even essential health services may need to rethink their strategic approaches to focus on the multidimensional determinants of health and on implementation of the One Health approach. The increasing frequency of seasonal hazards and newer health risks and threats may require extra investment and resources, and a surge in diverse technical workforces that their existing systems may not be able to deliver. Even if designated national emergency funds exist, the cost of being unprepared may be far greater than the cost of investing in risk management, preparedness and operational readiness. Vast costs will be incurred from halting the progress of COVID-19 and from the resultant economic downturn in affected countries. If these funds had already been invested in the health sector prior to December 2019, the world would have been much better prepared, healthier and more economically stable.

The health of an individual, community or country does not simply mean the absence of disease and infirmity, nor is it solely dependent on access to a health-care system. Instead, there are many determinants that influence health and well-being. The public health system itself is part of a larger system in each country; similarly, one country’s system is part of an international network. The surrounding environment of biological, physical, and sociocultural and economic factors interacts with and plays a role in the health and well-being...
of an individual at the micro level as well as the health and well-being of countries, continents and the world at the macro level. The ecosystem of planet Earth is a life-support system for humans as well as for other forms of life.

“Public health ecology” refers to the interrelationship between humans and their environment, and the quality of this relationship is measured in terms of the health of the people who are dependent on the nature and quality of their surrounding environment, including their physical, biological and sociocultural environment. Rapid changes in the public health ecosystem are reflected in changes in demographic and disease patterns, climatic conditions, forest cover, marine and terrestrial wildlife habitats, and the overall ecosystem of the Earth. The delicate balance between the habitats of different life forms has been disrupted to the extent that many species become extinct each year as a result of humans encroaching upon and eroding their habitats.6–9

Despite advances and improvements in all aspects of human health, including the availability of public health care, new technologies, and innovative medicines and vaccines, the vulnerability of human populations to multiple hazards, risks and new threats is rising. This coincides with the gradual decline in the quality of our protective surrounding environment, resulting from acts of omission or commission. Natural hazards, including extreme hot or cold weather events, forest fires and poor air quality, have become increasingly frequent.10 In addition to outbreaks of common infectious diseases, the increasing frequency of emerging and re-emerging diseases, including zoonoses,11–14 further complicated by increasing antimicrobial resistance, imposes a significant burden on health-care services, front-line health workers and governments, in addition to the individuals affected and their families.

The hazards and risks known to us are not the end of the list. Further complications threatening the future of health security include unplanned land use; inequitable development; unregulated urbanization; increasing interfaces between humans and domestic and wild animals; growing civil conflicts within and among communities and countries; and unpreparedness for chemical, biological, radiological and nuclear events. Added to these are the hazards and threats that are as yet unknown to us. Is the reporting under the core capacities of the IHR sufficient to guide States Parties to be prepared for such hazards, risks and threats?

The truth is that we have not really questioned our approaches to global emergency preparedness despite extensive experience. The world experienced three major pandemics of bubonic plague between the 14th and 17th centuries (an estimated 200 million people died),15 seven pandemics of cholera over the past 200 years16 (with an estimated annual case burden of 1.3–4.0 million and 21,000–143,000 deaths worldwide),17 the most lethal epidemic of influenza in 1918 (an estimated 40 million people died)18 and the slow pandemic of HIV/AIDS since 197019 (with a global caseload of 75 million and about 32 million deaths attributed to HIV by the end of 2018).20 The severe acute respiratory syndrome (SARS) outbreak, which first emerged in Guangdong province in China around November 2002 and affected over 8000 people in 26 countries across 5 continents,21 is still a fresh memory, as are the Ebola outbreaks of 2014–2016 in west Africa (around 28,616 cases and 11,310 deaths)22 and the Zika virus epidemic in South America in 2015–2016.23

Our approaches remain focused on strengthening health systems and the outbreak response process. It is time to rethink these very disease- and public health-oriented approaches – as posited during and after the influenza A(H5N1) pandemic – to adopt a whole-of-government and whole-of-society approach.24,25 Real investments in health are needed, to design systems that are truly resilient to any hazard, and people need to be part of these systems. The rapidly changing ecosystem and public health ecology and the increased vulnerability of human populations across the globe amid emerging health hazards, risks and threats demand the attention of policymakers, public health administrators, and scientists from all disciplines and communities to integrate an emergency risk management approach into all development plans.

Health emergency risk management in South-East Asia: managing risks versus managing events

The decision to make scaling up capacity for emergency risk management a flagship priority programme of the WHO Regional Office for South-East Asia in 2014 was timely. As described in this issue of the WHO South-East Asia Journal of Public Health, the approach has inspired various initiatives for risk management and attracted a great deal of attention from national governments with regard to building health emergency capacities and improving their implementation of the IHR. For example, there has been 100% compliance with State Party annual reporting since 2016; eight Member States have conducted joint external evaluations; and seven national action plans for health security have been developed.26,27

Despite this progress, roadblocks remain. Member States are still not fully attuned to regular mapping of risks, hazards and vulnerabilities, such that at least the known and prevailing threats can be minimized. This leaves countries vulnerable and exposed to the unknown threats that loom over the region. In addition, the allocation of domestic funds and other resources for disaster risk reduction, preparedness, operational readiness, and timely and effective response and recovery has not been adequate. The adoption of the ministerial-level Delhi Declaration on Emergency Preparedness during the 72nd session of the WHO Regional Committee for South-East Asia in September 2019 signals hope for informed change at the highest policy levels to make strong commitments to invest in emergency preparedness.28

To make their existing routine health systems more resilient, Member States of the WHO South-East Asia Region must think beyond their usual burdens, incidences, distributions and patterns of hazards, epidemics and human-triggered accidents or threats. Public health systems need to be operationally ready to absorb the shocks and stresses of all known and unknown threats that may unfold in the coming years. The areas that need urgent strengthening and consolidation are indicated in Box 1.

Conclusion

The COVID-19 pandemic has exposed weaknesses in the capacity of global public health to manage both risks and...
This will need a strategic shift from “investing in emergency response” to “investing in minimizing risks across sectors”. Most importantly, there will need to be a comprehensive rethink before we rebuild multisectoral systems sufficiently prepared to respond to the next pandemic. Collaboration across the region will be key in this endeavour, with Member States sharing experiences and lessons learnt. The South-East Asia Regional Knowledge Network of IHR National Focal Points and domain experts provides an online platform for the sharing knowledge, experiences and best practices to sustain, accelerate and innovate to support emergency risk management endeavours at national and subnational levels. We hope that the collection of papers featured in this issue of the WHO South-East Asia Journal of Public Health will provide another platform to expand knowledge-sharing on emergency risk management and to encourage increased investment in emergency preparedness in the region and beyond.

Poonam Khetrapal Singh
WHO Regional Director for South-East Asia

Roderico H Ofrin
Regional Emergency Director
WHO Health Emergencies Programme
WHO Regional Office for South-East Asia
New Delhi, India


References


Box 1. Areas needing urgent improvement in Member States of the WHO South-East Asia Region

- Regular mapping and updating of the prevailing risks, hazards and vulnerabilities at community, systems and environment levels
- Intersectoral coordination, cooperation and collaboration on risk identification, data sharing and mitigation measures
- Surveillance capacities, contact tracing and reporting mechanisms at all levels for health intelligence
- National- and regional-level databases on the impact of various health emergencies, to facilitate evidence-based decision-making and policy direction
- Building an IHR-focused community of practice through online platforms such as the South-East Asia Regional Knowledge Network of IHR National Focal Points, the Global Outbreak Alert and Response Network (GOARN), the Public Health Emergency Operations Centre Network (EOC-NET) and the Port, Airport and Ground Crossing Network (PAGnet)
- Biosafety and biosecurity standards and their implementation in laboratories, together with advanced technical skills and equipment
- Building diverse health workforces through building the capacity of front-line health workers and strengthening national rapid response teams and emergency medical teams
- Prevention and management of chemical, biological, radiological and nuclear events
- Functional systems and plans for risk communication
- Mobilizing resources for dedicated emergency funds for strengthening risk reduction and preparedness at national and regional levels
- Prevention and control of antimicrobial resistance

hazards. It is a wake-up call for scientists, experts, policymakers, administrators and communities, highlighting that a focus on provision of health-care services and targeting resources for emergency response only will be insufficient in the face of future known and unknown threats to human health. Instead, integration of risk-informed planning into national action plans and dedicated allocation of funds and other resources for risk reduction, preparedness and operational readiness across health and related sectors should be implemented with the highest-level political support. Member States of the WHO South-East Asia Region have signalled their commitment through the Delhi Declaration on Emergency Preparedness but still need to scale up implementation of the One Health and interdisciplinary and intersectoral collaborative approaches that will be essential to restoring the public health ecology for improved health and well-being in the region.

Member States of the region must regularly update risk identification and mapping and population vulnerabilities as well as the safety and functionality of their systems to inform agile national and subnational strategies capable of mitigating the impact of hazards and to enable early detection and containment of outbreaks of known or unknown pathogens. This will need a strategic shift from “investing in emergency


29. WHO Regional Committee for South-East Asia resolution SEA/RC71/R5 on strengthening emergency medical teams (EMTs) in the South-East Asia Region. New Delhi: World Health Organization Regional Office for South-East Asia; 2018 (https://apps.who.int/iris/bitstream/handle/10665/328056/sea-rc71-R5-eng.pdf?sequence=1&isAllowed=y, accessed 16 March 2020).