TOWARDS A SAFER FUTURE

Chapter 5 emphasizes the importance of strengthening health systems in building global public health security. It argues that many of the public health emergencies described in this report could have been prevented or better controlled if the health systems concerned had been stronger and better prepared. Some countries find it more difficult than others to confront threats to public health security effectively because they lack the necessary resources, because their health infrastructure has collapsed as a consequence of under-investment and shortages of trained health workers, or because the infrastructure has been damaged or destroyed by armed conflict or a previous natural disaster. With rare exceptions, threats to public health are generally known and manageable.

chapter 5

The world has, after all, accumulated the knowledge and experience of centuries of confronting such dangers. The evolution of measures such as quarantine, sanitation and immunization, outlined in Chapter 1, the rapid scientific and technological advances of the late 20th century, and flourishing international partnerships in health that use the latest communications have together led to a much better understanding of important public health events in today's globalized world.

Chapter 2 gave examples of the tragic and costly consequences of inadequate health system investment, surveillance and control, as in the case of AIDS, dengue and other infectious diseases; and Chapter 4 provided a further example in the case of extensively drug-resistant tuberculosis. Strengthening health systems is a continuous priority for WHO. As discussed at length in *The World Health Report 2006 – Working together for health*, many national health systems today are weak, unresponsive, inequitable and even unsafe. The 2006 report identified 57 countries where shortages are so dire that they are very unlikely in the near future to be able to provide high coverage of essential interventions. These shortages are equivalent to a global deficit of 2.4 million doctors, nurses and midwives.

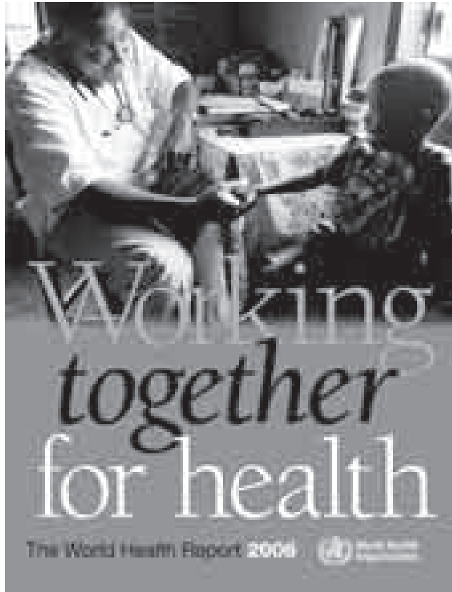
These 57 countries, most of them in sub-Saharan Africa and South-East Asia, are struggling to provide even basic health security to their populations. How, then, can they be expected to become a part of an unbroken line of defence, employing the most up-to-date technologies, upon which global public health security depends?

Such a defence is reliant on strong national public health systems that are well-equipped – both with appropriate technology and talented and dedicated personnel – to detect, investigate, communicate and contain events that threaten public health security whenever and wherever they occur.

Clearly, the strengthening of weaker health systems is essential not only to assure the best possible public health of national populations, but also to assure global public health security. These national and international priorities are welded together by IHR (2005), which call for national core capacity strengthening and collective global action for public health emergencies of international concern – those events that endanger global public health.

HELPING COUNTRIES HELPS THE WORLD

The examples of avian influenza, extensively drug-resistant tuberculosis and poliomyelitis, given in Chapter 4, represent current threats to national and international public health security – each event should prompt the relevant country to apply the decision instrument of IHR (2005) (see Figure 5.1).



If an event falls within the requirements of the decision instrument, and is confirmed to be a public health emergency of international concern, the country is obliged to report it to WHO. In turn, WHO and its partners will respond as necessary with support to contain the threat at its source. This is, of course, how the Regulations best serve the interests of global public health security in an ideal world. In reality, not all countries have the resources to fully meet the core capacity requirements of the Regulations immediately, or even by the 2012 deadline. They are, therefore, poorly equipped to detect, identify and respond to events, compromising global public health security.

This limitation poses significant challenges to all countries, WHO and its partners in global public health security. The following section explores these challenges and presents strategies to overcome them. Seven strategic actions are set out in Table 5.1 to assist countries with the challenges inherent in meeting the new obligations.

Global partnerships

The success of IHR (2005) depends to a large extent upon strong international partnerships. In many areas, such as in the area of infectious disease and chemical dangers, these partnerships already exist. In others they need to be built. Partnerships between, for example, ministries of health and WHO, are well established and will more easily fall in step with the requirements of IHR (2005).

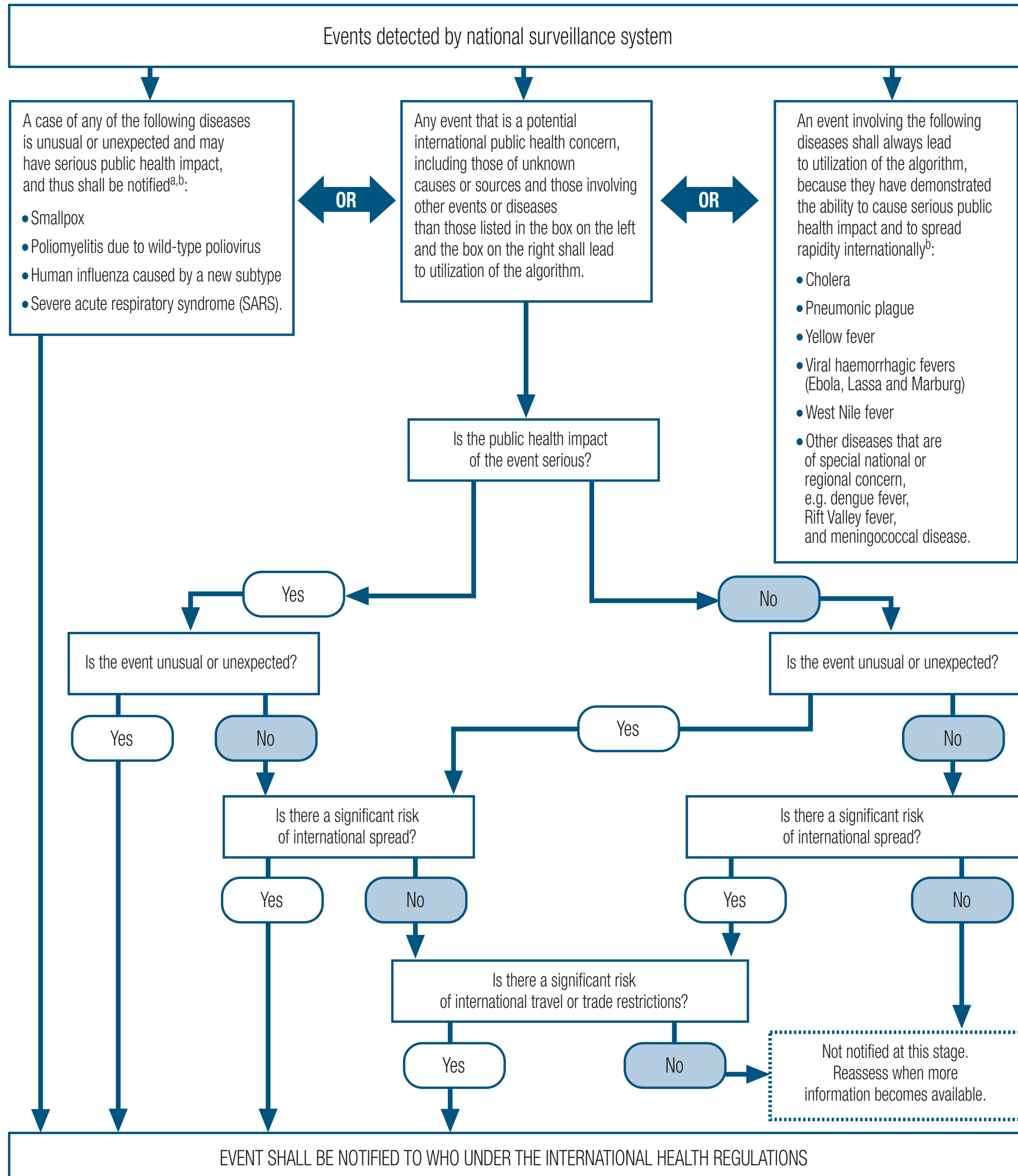
Less traditional partnerships, such as those between health, travel and defence, will require concerted efforts at the national level to ensure the interests of all parties are transparent and well represented. The IHR (2005) are intended to minimize impact on travel and trade, yet there may be times when difficult decisions will have to be made that will affect these sectors. Strong partnerships, a full understanding of IHR (2005), and the urgent need to halt the international spread of disease in the best interests of economies as well as public health will facilitate such decisions.

Part of the challenge when creating and maintaining effective partnerships is in building trust from various perspectives: trusting individual countries to change mindsets and move from covering up disease outbreaks to adopting transparency from the initial case or event, and trusting WHO to act on information in the world's best interests, while minimizing the impact on the economy of reporting countries.

WHO must, of course, earn this trust through country support during the initial assessment and ongoing implementation phases of IHR (2005), and through open dialogue with governments, private sector institutions, funding organizations, partner United Nations agencies and civil society.

Trust between countries is also critical in establishing the highest level of global health security possible. All 193 WHO Member States are parties to IHR (2005), but not all currently have the capacity requirements to implement them fully. Technical and financial assistance, beyond that provided by WHO, will be necessary. Bilateral agreements will be built on the understanding that failure in one country is a threat to all, and global benefits can only come from mutual cooperation.

Figure 5.1 Events that may constitute a public health emergency of international concern: the decision instrument*



* Extracted from Annex II of IHR (2005).

[a] As per WHO case definitions. [b] The disease list shall be used only for the purposes of these Regulations.

Table 5.1 Seven strategic actions to guide IHR (2005) implementation[a]

	Strategic action	Goal
	GLOBAL PARTNERSHIP	
1	**Foster global partnerships**	WHO, all countries and all relevant sectors (e.g. health, agriculture, travel, trade, education, defence) are aware of the new rules and collaborate to provide the best available technical support and, where needed, mobilize the necessary resources for effective implementation of IHR (2005).
	STRENGTHEN NATIONAL CAPACITY	
2	**Strengthen national disease surveillance, prevention, control and response systems**	Each country assesses its national resources in disease surveillance and response and develops national action plans to implement and meet IHR (2005) requirements, thus permitting rapid detection and response to the risk of international disease spread.
3	**Strengthen public health security in travel and transport**	The risk of international spread of disease is minimized through effective permanent public health measures and response capacity at designated airports, ports and ground crossings in all countries.
	PREVENT AND RESPOND TO INTERNATIONAL PUBLIC HEALTH EMERGENCIES	
4	**Strengthen WHO global alert and response systems**	Timely and effective coordinated response to international public health risks and public health emergencies of international concern.
5	**Strengthen the management of specific risks**	Systematic international and national management of the risks known to threaten international health security, such as influenza, meningitis, yellow fever, SARS, poliomyelitis, food contamination, chemical and radioactive substances.
	LEGAL ISSUES AND MONITORING	
6	**Sustain rights, obligations and procedures**	New legal mechanisms as set out in the Regulations are fully developed and upheld; all professionals involved in implementing IHR (2005) have a clear understanding of, and sustain, the new rights, obligations and procedures laid out in the Regulations.
7	**Conduct studies and monitor progress**	Indicators are identified and collected regularly to monitor and evaluate IHR (2005) implementation at national and international levels. WHO Secretariat reports on progress to the World Health Assembly. Specific studies are proposed to facilitate and improve implementation of the Regulations.

[a] Strategic actions 2–5 are key because they call for significantly strengthened national and global efforts.

Strengthening national capacity

National, intermediary and local public health systems are charged with providing the core capacities needed to detect, assess, report and deploy rapid control measures to public health events of international concern. In line with the Regulations, Member States must complete an initial assessment of their capacity to meet these requirements by the June 2009 deadline, and, if found insufficient, develop a national plan to build the necessary capacity within the following three years. Several countries began capacity building and implementation of the Regulations before they entered into force (see Box 5.1). For many more countries, financial and human resources constraints will hamper their ability to meet the deadline. WHO has a critical role to play in assisting countries to build capacity and estimates that it will have to support 115 countries to develop national plans of action or strategy papers to meet the Regulations' core capacity requirements (*1*).

Box 5.1 IHR (2005) – early implementation efforts

Global Partnerships

The Andean Health Organization (Organismo Andino de Salud), an institution of the Andean Integration System, coordinates and supports the efforts made by its member countries, both individually and jointly, to improve the health of their people.

During the March 2007 meeting of the Ministries of Health, it was decided to merge all the existing surveillance networks in South America and to create a regional network for surveillance and response in order to harmonize the instruments and processes in the member states (*2*).

Several countries have also set up Emergency Operation Centers (EOC) that will enable them to physically as well as virtually centralize the epidemic intelligence and the coordination of the response to a real or a potential emergency. The EOC will have the responsibility to obtain, organize, analyse, prioritize, monitor and disseminate information about health emergencies.

A number of countries – Argentina, Brazil, Canada, Mexico, Peru and the United States – have already set up EOCs and will support, in collaboration with the WHO Regional Office for the Americas, other countries in the region to establish additional centres. In conjunction with the National IHR Focal Points, EOCs will constitute a powerful infrastructure for alert and response to public health emergencies.

National capacity building

In anticipation of the coming into force of IHR (2005), the Kingdom of Morocco has begun activities to strengthen the competencies of health professionals involved in the application of the Regulations and is progressively putting in place the necessary tools and means to strengthen the core capacity requirements for surveillance and response.

Ongoing workshops and technical training for airport and port health officers were initiated in 2007. Areas covered include a review of the information system of airport and port health authorities; the adaptation of existing health documents to the new models set out in IHR (2005); and comprehensive strengthening of public health capacities at designated international points of entry.

In a commitment to cross-sector collaboration and representation, Morocco has also established an interministerial committee for the implementation of the Regulations. The first meeting of this group symbolically coincided with the launch of IHR (2005) on 15 June 2007.

Legal issues

Canada's direct experience with SARS prompted the government to update its Quarantine Act in 2004. At the time, the Act contained elements that could be traced back to 1872, when Canada was a new nation and the primary mode of travel was by sea. It was, therefore, in dire need of modernization. A new Quarantine Act was passed by the Parliament of Canada in May 2005 and came into force on 12 December 2006, seven months prior to the implementation of IHR (2005).

The revision of the new Quarantine Act ran in parallel with the development of the revised Regulations, with their respective adoptions in May and June 2005. Although the simultaneous development provided the opportunity for insights, there are some IHR (2005) obligations, primarily concerning points of entry, which were not reflected in the new Quarantine Act. The government is currently reviewing those gaps and will be proposing amendments to meet the core capacity requirements of the Regulations.

National plans will vary from country to country, but will contain components such as building or strengthening national public health institutes; ensuring that national surveillance and response systems use internationally recognized quality standards; strengthening human resources capacity through training programmes in intervention epidemiology, outbreak investigation, laboratory diagnostics, case management, infection control, social mobilization and risk communication; and using WHO indicators to carry out regular assessments of core capacities to monitor progress and assess future needs. In this regard, WHO expects the number of countries participating in training programmes related to IHR (2005) core capacities to increase from 100 in 2008 to 150 in 2009 (*1*).

The control of diseases at border crossings – whether land, sea or air – is an essential element of the Regulations. Many of the requirements for protecting public health apply to these locations and are new or different from the previous Regulations. They will require close collaboration between WHO and other organizations of the United Nations system (e.g. the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) and the World Tourism Organization (UNWTO)) and professional associations (e.g. the International Air Transport Association (IATA) and the Airports Council International (ACI)). Contingency plans for public health emergencies and the capacity to implement them must be available at all designated points of entry in all countries.

Some countries will find it more difficult than others to confront threats to public health security effectively. This may be because they lack the necessary resources and technical capacity, because their health infrastructure has collapsed as a consequence of under-investment and shortages of trained health workers, or because the infrastructure has been damaged or destroyed by armed conflict or a previous natural disaster.

In addition to a strengthened alert and response capacity component, the Regulations also legally bind WHO to support countries in building their capacity to meet their obligations under IHR (2005). Work includes facilitating national and international resource mobilization and advocacy. These activities are especially crucial for the countries that have the weakest health systems. Health crises of epidemics, natural disasters and conflict are often unexpected and can quickly overwhelm national health systems, especially those already in a precarious state.

During public health emergencies, local communities are the first to respond, followed by district and national governments. Many societies do not have the resources to be adequately prepared at all times, and countries do not always have the resources to manage a major emergency or outbreak without external assistance. Qualified, experienced, and well-prepared international health personnel are often needed to help. Cooperation between countries is necessary to ensure the safety net provided for in IHR (2005), as described in Chapter 1. The quality of response, ultimately, depends upon workforce preparedness based on local capacity backed by timely international support.

Well-prepared health systems can effectively contribute to preventing health events from becoming security emergencies. Many newly emerging security scenarios, such as deliberate releases of chemical, biological or radionuclear substances and potential terrorist attacks, are intended to jeopardize the health and security of communities, with health services being the first entry point for possible victims. In the first instance, such health emergencies might not immediately be recognized as a security event,

particularly if health systems are inadequately prepared for – or unaware of – such potential scenarios. It is crucial to promote further collaboration and a continuous dialogue between health professionals, security officials and policy-makers to increase mutual understanding of respective systems and operational procedures.

Preventing and responding to international public health emergencies

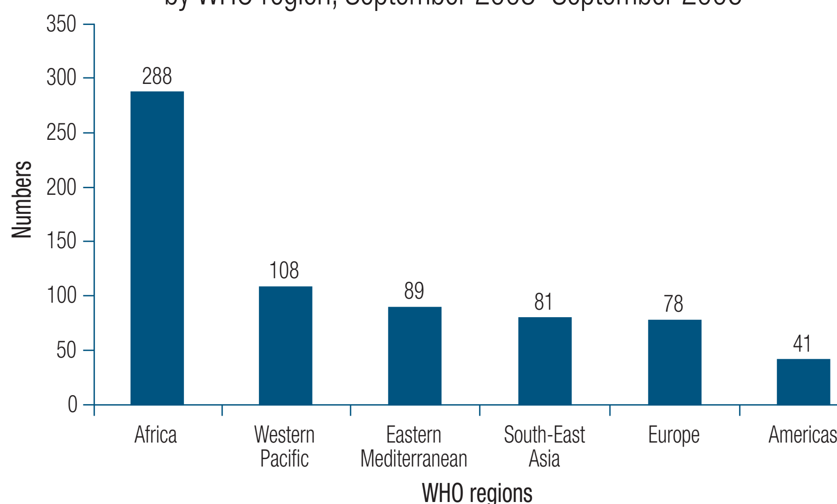
No single country – however capable, wealthy or technologically advanced – can alone prevent, detect and respond to all public health threats. Emerging threats may be unseen from a national perspective, may require a global analysis for proper risk assessment, and may necessitate effective coordination at the international level.

This is the basis for the revised Regulations. As not all countries are able to take up the challenge immediately, WHO is drawing upon its long experience as the leader in global public health, its convening power, and its partnerships with governments, United Nations agencies, civil society, academia, the private sector and the media to maintain its surveillance and global alert and response systems.

As described in Chapter 1, WHO surveillance networks, (e.g. GOARN, ChemiNet, the polio surveillance network) are effective international partnerships that provide both a service and a safety net. GOARN, for example, is able to deploy response teams to any part of the world within 24 hours to provide direct support to national authorities. WHO's various surveillance and laboratory networks are able to capture the global picture of public health risks and assist in efficient case analysis (see Figure 5.2). Together, these systems fill acute gaps caused by the lack of national capacity and protect the world when there may be a desire to delay reporting for political or other reasons.

The effective maintenance of these systems, however, must be adequately resourced with staff, technology and financial support. The building of national capacity will not diminish the need for WHO's global networks. Rather, increased partnerships, knowledge transfer, advancing technologies, event management and strategic communications will grow as IHR (2005) reaches full implementation.

Figure 5.2 Verified events of potential international public health concern, by WHO region, September 2003–September 2006



Total number of cases = 685

WHO emergency response teams deploy to even the most remote regions within 24 hours

Simultaneous with the need to prepare for urgent response is the need to prevent and contain the diseases and other incidents that could cause a public health crisis warranting international response. As mentioned previously, medical personnel working on prevention programmes, such as polio immunization campaigns, are often the first point of entry into the public health system and can detect the earliest suspicious cases of disease, food safety outbreak, chemical exposure or other threatening situation. For the obvious benefit of prevention, particularly of those diseases that either automatically require notification under IHR (2005) – such as polio due to wild-type poliovirus, or SARS – or those that always require the use of the decision instrument (e.g. cholera, pneumonic plague or yellow fever) it is important to maintain and strengthen WHO's international disease control programmes.

Legal issues and monitoring

It is not only public health professionals working in clinics and laboratories who must understand the new requirements under IHR (2005). Policy-makers and national public health officials must appreciate the new legal requirements agreed to by all parties and, if necessary, take action to bring national policies in line with them. Canada, for example, revised its Quarantine Act in parallel with the development of IHR (2005) (see Box 5.1).

While the Regulations are not unknown to countries, the shift in conceptual framework – from control at borders to containment at the source; from a list of diseases to all public health threats; from preset measures to an adapted response – will require a shift in understanding that will take time to assimilate.

In order to ensure that understanding grows in line with the technical aspects of implementation, WHO is developing specialized training programmes for legal and public health professionals and is assisting countries to adapt or develop existing or new public health legislation to comply with the Regulations.

The only way to ensure understanding of and compliance with the revised IHR (2005) is to actively monitor the progress of implementation efforts at the national, regional and global levels. Feedback, particularly during the initial phases, will provide insight into areas for improvement in training, implementation and adherence strategies. It should also serve to build donors' confidence in the capacity of WHO and recipient countries to execute the core capacities of IHR (2005) with rigour and efficiency.

WHO is charged with making regular assessment reports to the World Health Assembly that will include quantitative and qualitative measures of progress and difficulties encountered in implementation at all levels, including national public health systems and legal procedures and processes, as well as proposals for research areas, recommendations to improve implementation and ongoing resource requirements.

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