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What is the WHO's "Global Public Health Security" Initiative?

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 Printer Friendly

The global health situation has changed dramatically since 1951 when the World Health Organization (WHO) issued its first set of regulations to prevent the international spread of six "quarantinable" diseases—cholera, plague, relapsing fever, smallpox, typhus and yellow fever. (1,2) New diseases in 1951 emerged only rarely, and antibiotics and vaccines helped reduce the heavy infectious disease load born by humanity for millennia. Most people travelled internationally by ship, and important news travelled by telegram. (1)



Margaret Chan, M.D., director-general, World Health Organization. Source: <http://web.archive.org/web/20111011030226/http://w...>; accessed October 1, 2007.



World Health Assembly, World Health Organization. Source: <http://web.archive.org/web/20111011030226/http://w...>; accessed October 1, 2007.

The global health situation today is not the same as in 1951. The unprecedented rate of emergence of new diseases is now one per year. (1) Two billion people travel by airplane each year to reach destinations around the globe. Some of them carry with them contagious diseases, such as SARS and tuberculosis, and disease vectors, such as chikungunya-infected mosquitoes and monkeypox-infected exotic pets. (3-6) Bioterrorism is a continuous threat.

Chinese physician Margaret Chan, the newly appointed (November 2006) WHO director-general, grasps this red-hot state of global health affairs. (7,8) As Hong Kong's health department director (1994-2003), she experienced firsthand the sudden destabilizing "health shocks" to her city and to the world, which resulted from the virulent H5N1 avian influenza and SARS infectious disease outbreaks in 1997 and 2003, respectively. (9) As the new WHO leader, Dr. Chan is promoting "global public health security", a new term in the growing lexicon of professional health terminology. What is global public health security?

WHO Defines Global Public Health Security

The WHO pays attention to definitions. (10) Public health security is "the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of national populations." (11) "Global public health security widens this definition to include acute public health events that endanger the collective health of populations living across geographical regions and international boundaries." Indeed, "global health security, or lack of it, may also have an impact on economic or political stability, trade, tourism, access to goods and services and, if they occur repeatedly, on demographic stability. Global public health security embraces a wide range of complex and daunting issues, from the international stage to the individual household, including the health consequences of human behaviour, weather-related events and infectious diseases, and natural catastrophes and man-made disasters." (11)

The WHO has embraced a much broader vision than the disease-specific one it articulated in 1951. It has based the bold new operating framework on the timely notification of all events that might constitute a public health emergency of international concern (taking into account the context in which an event occur). (12) "The advantage of this approach is its applicability to existing threats as well as to those that are new and unforeseen," notes WHO staff member Guenaël Rodier, M.D., and his colleagues. (12)

The new approach also recognizes "the existence of threats to public health outside the infectious disease context, such as those associated with natural disasters, industrial or chemical accidents, and other environmental changes, which might cross international borders." (12,13) For example, in 2006, about "500 tons of petrochemical waste in at least 15 sites around the city of Abidjan [West Africa] left eight people dead and nearly 80,000 more complaining of ill health and seeking medical help" (a toxic chemical event). In 2003, the European heat wave claimed the lives of 35,000 persons (an environmental disaster). In 1986, the Chernobyl nuclear plant explosion disaster badly burned local geography and contaminated with radioactive fallout the western Soviet Union, eastern and western Europe, Scandinavia, the United Kingdom, Ireland and eastern North America (a nuclear plant disaster). (13) Because of the public health issues involved, the WHO now claims that these disasters are relevant to its scope of work.

How WHO Plans to Implement its Global Public Health Security Policy

The "key driver" (Rodier's term) of the new WHO global public health security policy is the International Health Regulations (2005), which the World Health Assembly endorsed on May 23, 2005, and published in June 2007. (13) Seven "areas of work" guide the new international health regulations, as follows:

1. **Foster global partnerships.** The goal here is for "WHO, all countries and all relevant sectors (e.g., health, agriculture, travel, trade, education, defense) [to be] 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) [International Health Regulations (2005)]." If sector entities lack awareness of WHO expectations, the likelihood that these expectations will be met is nil. Furthermore, sector entities are critical to the functioning of the operating system the WHO envisions. Without individual sector entities participating in the global public health security initiative, it will not become a reality.
2. **Strengthen national disease surveillance, prevention, control and response systems.** The goal here is to improve the timeliness of detecting and responding to the risk of international disease spread, by requiring each country to assess its national resources in disease surveillance and response and develop national action plans to implement and meet IHR (2005) requirements. (13) This expanded area of work is key, notes Rodier, et al, because "experiences during the past several years have shown that public health emergencies expose the weaknesses and vulnerabilities of national and subnational public health infrastructure." One recent example was the delay until February 2003 of Guangdong Province public health officials notifying the WHO about the atypical pneumonia surging through the province beginning in November 2002. "The best way to prevent the global spread of diseases is to detect and contain them while they are still local," declares Rodier. (14) To preclude confusion as to the obligation for reporting a public health emergency occurring in their territory, member states must report to specified WHO contact points (more below) events that fulfill at least two of the following criteria:
 - a. Is the public health impact of the event serious?
 - b. Is the event unusual or unexpected?
 - c. Is there a significant risk of international spread?
 - d. Is there a significant risk of international trade or travel restriction? (15)

Furthermore, "[t]o facilitate the use of the decision instrument, which requires some judgment to answer each of the questions, Annex 2 of the Regulations provides specific examples of events that might constitute a public health emergency of international concern. In addition to this broad scope for notification, IHR (2005) includes a list of diseases for which a single case must be reported to WHO immediately, regardless of the context in which the disease occurs. This list includes smallpox, poliomyelitis due to wild-type poliovirus, human influenza caused by a new subtype, or SARS. In addition, an event involving certain other diseases (e.g., cholera, pneumonic plague, yellow fever, viral hemorrhagic fevers) calls for a careful evaluation using the decision instrument to determine whether notification is indicated." (15)

3. **Strengthen public health security in travel and transport.** The goal here is to minimize the "risk of international spread of disease...through effective permanent public health measures and response capacity at designated airports, ports and ground crossings in all countries," says the International Health Regulations (2005). In other words, the WHO expects that "facilities used by travelers at points of entry are maintained in a sanitary condition and are kept free of infection or contamination, including vectors and reservoirs; routing measures are in place for travelers, conveyances, cargo, goods and postal parcels; a public health contingency plan for public health emergencies is effectively available and operational at all designated points of entry and in all countries; designated points of entry have the capacity to rapidly implement international public health recommendations; and coordination exists between WHO and other relevant United Nations and intergovernmental organizations, industry associations and travel-related professional associations." (16)
4. **Strengthen WHO global alert and response systems.** The goal here is to improve the timeliness and effectiveness of a "coordinated response to international public health risks and public health emergencies of international concern." (13) Rodier, et al. interpret this innovation under IHR (2005) as follows: WHO now requires member states to "designate 'national IHR focal points' as the operational link for notification and reporting to WHO and for WHO to name corresponding 'IHR contact points.' Effective communication between these 2 organizational entities will be central to the rapid management of a possible public health emergency of international concern. IHR focal points, or their designees, are required by IHR (2005) to be accessible at all times." (15) To many observers, the fact that these systems are only now coming into place is astonishing. When the WHO receives notification of a public health emergency in a timely manner (early reporting improves probability of rapid response), it can "provide timely, high quality risk assessments and early warning advice to States Parties on the prevention and control of public health risks, including those that may constitute a public health emergency of international concern." (17) For example, WHO notification by the People's Republic of China of the atypical pneumonia problem in Guangdong Province in November or December 2002 or even January 2003 could have averted or at least mitigated (in theory) the subsequent raging SARS epidemic that spread globally through airplane travel to Canada, Singapore, Germany and many other countries.
5. **Strengthen the management of specific risks.** The goal here is to proactively and effectively manage at the national level the known risks, such as influenza, meningitis, yellow fever, SARS, poliomyelitis, food contamination, and chemical and radioactive substances. To the degree that known threats are managed well, countries will be controlling or containing the vast majority of day-to-day events with the potential for public health emergency. The IHR (2005) document states explicitly:

"Preparedness and readiness for these threats are dependent on strong generic preparedness measures at national and international levels but also requires specific preparedness measures relating to surveillance, risk reduction, and response and containment. The development of specific risk reduction and containment processes is dependent on understanding the nature of the threat and implementing specific measures to reduce risk, which often requires cross sectoral communication and collaboration. Equally the development of interventions and the appropriate stockpiling of critical supplies require specific disease knowledge and a variety of partnerships within the public and private sector." (18)

For example, countries serious about managing known priority threats will stockpile vaccines, drugs, and personal protective equipment to respond effectively to those threats.

6. **Sustain rights, obligations, and procedures.** The goal here is to set out and uphold new **legal mechanisms** in the IHR, and to make certain that all relevant professionals involved in a public health emergency understand and sustain the new mechanisms. (19) As noted earlier, the new international health regulations are much broader in scope than predecessor versions. They also contain a notable "shift in focus". (19) "From a strict notification mechanism for cholera, plague and yellow fever, the revised IHR now cover all potential international public health emergencies, whether naturally-occurring, accidental or deliberately-provoked [i.e., terrorism]...Countries need...to absorb and take on this shift in focus, which calls for a pre-emptive and proactive approach to contain all public health threats at the source." (19) To satisfy the expectations in this WHO area of work requires a degree of success in meeting the expectations of the previous five areas of work.
7. **Conduct studies and monitor progress.** The goal here is continuous improvement of global public health security through the ongoing collection, analysis, and use of reliable and valid data about important processes and outcomes that comprise the global public health security initiative. If public health leadership, management, and operations staff do not know what their processes are doing through the continuous collection of reliable and valid data derived from those processes, they are "flying blind" in the face of their stated mission of "the attainment by all peoples of the highest possible level of health."

Conclusion

The World Health Organization has boldly broadened its scope of work, undertaking an ambitious initiative to improve global public health security after 38 years of using a model relevant to the calmer needs of an earlier time.

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