Chemical incidents are a public health problem

Chemical releases arising from technological incidents, natural disasters, and from conflict and terrorism are common. The International Federation of the Red Cross has estimated that between 2000 and 2009, there were 7184 disasters worldwide, 3170 of them technological, which have affected more than 1.5 million individuals.

The production and use of chemicals is predicted to further increase worldwide, and this is particularly true in developing countries and those with economies in transition, where chemical extraction, processing and use are closely tied to economic development.

Health sector needs

The introduction of new chemicals into a society requires the health sector to expand its traditional roles and responsibilities so it can address the public health and medical issues associated with the management of chemicals and their health effects. In addition, the International Health Regulations (2005) (IHR) require countries to develop improved capacities for the surveillance and detection of chemical-related outbreaks that may have international public health impacts.

Many countries lack necessary capacities

Many countries still lack adequate preparedness, surveillance and response capacities for chemical events. The WHO survey of IHR capacities in 2012 has shown that reporting countries are making fair progress towards achieving core capacities for IHR implementation in surveillance, response and human/animal disease events. Capacity status for chemical events, however, remains low overall, with a global average of 51%. In five of the six WHO regions the mean capacity score for chemical events is less than 50%, and only the European region scores higher, with 79%.

There is a widespread need in many countries for planning, development of procedures, increase in surveillance and response capacity and, above all, for inter-sector collaboration concerning chemical events. Awareness of IHR is a commonly highlighted challenge, as the obligations related to the IHR in the area of chemical events is rarely understood by the various sectors involved at national level, much less codified in legislation. As a consequence, IHR is frequently not integrated into plans and procedures.

Even where national capacities exist these may be overwhelmed in the event of a major disaster, requiring international assistance to be provided. The health sector is often in the front line, and requests for assistance come to WHO.

What WHO is doing

Through its Department of Public Health and Environment (PHE), WHO works to raise awareness about the public health impact of chemical incidents, to strengthen national capacities, provide international alerts and response, and maintain international networks for the public health management of chemical events, in accordance with IHR.

The WHO Department of Public Health and Environment (PHE) works to promote a healthier environment, intensify primary prevention and influence public policies in all sectors in order to address the root causes of environmental threats to health.
How countries benefit

National capacity building: Assistance is provided to countries to conduct national capacity assessments and to develop national action plans. Guidelines and training materials are developed to assist countries to strengthen national planning and implementation. Training is provided on the public health management of chemical incidents and emergencies. The focus of these activities is on developing countries.

International alert and response: In support of the requirements of the IHR, international alert and response capacities are being strengthened, including the development of emergency response tools (e.g. for the investigation of disease outbreaks of possible chemical origin), training of international chemical emergency experts, and other activities to promote the development and strengthening of poisons centres.

International networks: An informal network of experts is maintained to support the above functions, including toxicology laboratories, toxicologists, risk assessors and chemical emergency responders.

Who we are

The WHO team undertaking the work consists of public health and medical professionals, including toxicologists, epidemiologists, as well as chemical safety experts trained and experienced in dealing with chemical incidents, especially in developing country contexts.

Achievements

✓ Raising awareness and training has been provided to countries including China, Mongolia, Somalia and Senegal, and also at regional meetings on public health and medical aspects of chemical incidents and emergencies in Africa, Asia and Latin America.

✓ A Manual for the public health management of chemical incidents and emergencies was developed for public health and related professionals. Training materials based on the manual have been developed in support of IHR implementation. An International Training Centre (ITC) for the Public Health Management of Chemical Incidents has been established at the WHO Collaborating Centre in Cardiff, United Kingdom.

✓ Between 2003–2013, chemical emergency assistance has been provided to countries, including: Afghanistan, Angola, Bangladesh, Côte d’Ivoire, DR Congo, Iraq, Mongolia, Nigeria, The Philippines, Senegal, Somalia and Thailand.

✓ The informal network of experts has been established to provide emergency assistance to countries investigating and responding to the public health and medical consequences of chemical incidents and emergencies.