

Feature Articles

December 2015

Global Network Grows to Assess Chemical Risks and Improve Health

By Paula Whitacre

The production, use, and disposal of chemicals are increasing worldwide and are governed by a wide range of regulations and laws in different countries. Chemicals provide important benefits to society but many also pose health risks to humans and the environment. The need to understand and manage the risks associated with chemical exposures poses a big challenge. The challenge is greater especially in countries with limited scientific knowledge and resources.

In 2013, the [World Health Organization \(WHO\) Chemical Risk Assessment Network](#) was officially formed with an announcement at the International Union of Toxicology in Seoul, South Korea. The Network's purpose is to "improve chemical risk assessment globally through facilitating sustainable interaction between institutions on chemical risk assessment issues and activities," according to Christopher Weis, Ph.D., NIEHS toxicology liaison and senior advisor. Weis co-chairs the Network steering committee with Raquel Duarte-Davidson, Ph.D., from Public Health England. Currently, the Network includes about 60 government agencies, academic institutions, nonprofits, and others that support public health and are engaged in human health risk assessment of chemicals. ([See box for information about joining.](#))

"The chemical industry is globalized," Weis said. "With the network, we are trying to build capacity to address environmental risks and threats, in a way that is both globally coordinated and, at the same time, relevant to a country's situation."



Steering Committee co-chairs Duarte-Davidson (left) and Weis (right) at the first Network meeting in 2014.

Communication and Collaboration

“Effective management of chemicals requires different sectors to work together,” said Richard Brown, Ph.D., technical officer in the WHO Chemical Safety Team and primary contact for the Network. “For example, people in decision-making positions in public health need the outcomes of chemical risk assessments to be in a form which is useful to them. In turn, researchers can use information from the Network to identify and fill gaps in data. As a network of institutions which cover a number of disciplines, rather than a network of individuals, the WHO Chemical Risk Assessment Network facilitates communication and collaboration between disciplines.”

The Network convened a face-to-face meeting of all participants in 2014, with a second planned for 2017. Frequent subgroup meetings, webinars, and phone calls also take place. NIEHS is providing conceptual and logistic support for many of these efforts, including a workshop for developing country members held at the Chulabhorn Research Institute (CRI) in Thailand from December 2-4, 2015. At this first meeting of the WHO Risk Assessment Network Sub-Network of Developing Countries, hosted by the WHO Collaborating Centre for Capacity Building and Research in Environmental Health Science and Toxicology at CRI, participants from approximately 15 institutions shared risk assessment experiences. The meeting focused on providing developing nations with information about risk assessment tools and the identification of project proposals for Network activities of particular interest to developing countries.

The Network’s various subgroups suggest projects related to environmental health issues that they are facing. Some subgroups focus on subject areas, such as endocrine disruptors, childhood exposures to lead paint, and methods of sharing information. The Network supports and curates an online [database](#) of risk assessment, toxicology, and health and safety training courses that can be used by Network participants for training and capacity building.

Presently, the Network is hosting a series of webinars about conducting systematic reviews of scientific data. A webinar in November on this topic brought together 60 participants from around the globe. It is expected that this effort will result in a systematic review framework that WHO will publish.

The Network also facilitates informal, yet vital, collaboration and communication. As an example, Weis pointed to a developing country member dealing with highly hazardous pesticides, one of [10 chemicals](#) or groups of chemicals WHO identifies as a major public health concern. Through the Network, the member has resources at its fingertips to understand the nature of these particular pesticides, and to identify the type of help needed to address concerns and where to go to find that help. “In some cases, a solution is as simple as speaking with someone else in a similar situation in another or their own country,” Weis said.

Strengthening WHO Chemical Safety Efforts

The secretariat for the Network operates out of the International Chemical Safety Programme (ICPS). “WHO’s International Programme on Chemical Safety works to establish the scientific basis for the sound management of chemicals, and to strengthen national capabilities and capacities for chemical safety,”

said Carolyn Vickers, WHO team leader for chemical safety. "Risk assessment is the cornerstone of sound chemicals management, and the Network provides an important forum for institutions to work together to improve chemical risk assessment globally."

On its website, the ICPS provides information for decision makers, health care providers, and technical experts on the [10 chemicals or groups of chemicals of major health concern](#): Air pollution, arsenic, asbestos, benzene, cadmium, dioxin and dioxin-like substances, inadequate or excess fluoride, lead, mercury, and highly hazardous pesticides. "Information like this, levels the playing field by sharing knowledge," Weis said. "It is good for public health and good for industry, as they know what they have to do to market their products while assuring protection of public and environmental health."

The Network is also loosely affiliated with other WHO entities, such as the more than 700 worldwide WHO Collaborating Centers, including one at NIEHS.

"Every nation has its own challenges related to chemical safety," said Weis. "By developing common frameworks and sharing information, the Network does not dictate what countries should do, but it provides a common body of knowledge for all."

Joining the WHO Chemical Risk Assessment Network

The WHO Chemical Risk Assessment Network welcomes new organizational participants to engage in, and contribute to, network activities. Participants identify a focal point for Network communications, share Network information within their organizations, and help identify new Network participants.

"Institutions which join the Network benefit from greater opportunities to interact with other institutions, for scientific exchange, to collaborate on projects of mutual interest, and to reduce duplication of effort," said Richard Brown, Ph.D., technical officer in the WHO Chemical Safety Team.

Membership is open to the following:

- government and public health institutions,
- intergovernmental organizations,
- professional societies,
- WHO Collaborating Centres,
- nongovernmental organizations in official relations with WHO, or
- other nonprofit entities with relevant expertise.

An application and list of current participants is available on the [Network website](#).