Public Health and Climate: Opportunities and Challenges

Gilma Mantilla

Public health is an effort organized by society to protect, promote and restore the people's health. It is the combination of sciences, skills and beliefs directed to the maintenance and improvement of health through collective or social actions. In this context, climate researchers should be considered a part of the public health community.

Climate impacts on health through a number of direct and indirect mechanisms. Direct mechanisms include episodes of heat or cold stress, which aggravate existing health conditions such as pulmonary and respiratory disease; extreme events, such as hurricanes that cause accidental injury and/or the breakdown in public services and sanitation, which may also directly impact health. Indirect mechanisms include the impact of climate anomalies on risk of infectious diseases such as malaria, dengue, meningitis, and cholera. However, climate is only one of many drivers (e.g., demographic, social, political, economic, environmental, and technological factors) of infectious diseases and public health outcomes that are measured outside of the health sector. What makes it unique is the fact that it is measured systematically at a local and global scale using standardized methodologies, and its fundamental characteristics mean that it is ideally suited as an additional source of information in climate-sensitive disease surveillance and forecasting.

Protecting public health from the impacts of climate is a priority for the public health community, as recognized during the World Health Assembly in 2008. Health professionals, epidemiologists, health management workers and health policymakers are increasingly concerned about the potential impact that climate variability and climate change could have on public health. However, many public health professionals are not yet aware of the ways in which climate information can help them manage the impacts of climate on their work. At the same time, climate scientists are not aware of how they can fill the information needs from the public health sector.

The occurrence of emerging and infectious diseases and other public health consequences of the climate variability and climate change requires the development of multiple entry points to tackle the problem. The process of developing climate-based tools and methodologies for public health e.g. early warning systems at the community level, for instance, requires a clear framework and partnerships built between those who supply data and information, those who use it and those who understand the societal consequences of both negative and positive impacts of climate. To date these relations have been hard both to build and to maintain. Interdisciplinary work and dialogue is necessary to bridge this gap.

There is also a need for more rigorous validation of some climate data and information used for disease risk mapping and surveillance by correlating it with ground-based environmental information and case-based surveillance data. Climate prediction models should endeavour to include disease control information in their forecast exercises whenever it is possible.

Present approaches to incorporating climate data and/or climate information into health planning, monitoring and evaluation are limited. They are typically included as part of climate change adaptation strategies, and often based on climate change scenarios developed from global climate models. These models focus on the long term, commonly extending out to 2050 and beyond. We challenge that, used alone, they are not appropriate for national adaptation policies, as policy time horizons for the latter are much shorter, usually 5, 10, or 20 years. This indicates a need for planning based more on climate variability than climate change adaptation. It will also demand a planning process with a cross sectorial approach and strategies to increase the public health community's capacity to understand the role of climate on disease and public health outcomes and demand the appropriate climate information to prevent diseases.

Capacity building and capacity development in different regions of the globe will help strengthen and improve the decisions made in the public health sector and is reflected in the reduction of the impacts of global environmental change.