

**Statement of Susan R. Cooper, MSN, RN,  
Commissioner, Tennessee Department of Health  
Before the United States Senate  
Environmental Public Works Committee  
October 23, 2007**

**Representing the Association of State and Territorial Health Officials**

**Opening**

Chairman Boxer, Senator Inhofe, Senator Alexander and Members of the Committee, I am Susan R. Cooper, MSN, RN, Commissioner of the Tennessee Department of Health and member of the Association of State and Territorial Health Officials (ASTHO). ASTHO represents the state and territorial public health agencies of the United States, the U.S. Territories, and the District of Columbia. Our members are the chief health officials of these agencies. My job is to protect, promote and improve the health of the citizens of my state. It is a pleasure to appear before you today to discuss the human health impacts of climate change.

**Background and Challenges**

First, let me begin by thanking you for recognizing the need to include the public health system in preparing for and responding to the consequences of climatic change. ASTHO supports the scientific consensus put forward within the Intergovernmental Panel on Climate Change Fourth Assessment Report that the weight of evidence demonstrates that human factors have and will continue to contribute significantly to changing the world's climate. This recognition is clearly illustrated through the unanimous passage of a Position Statement on Public Health and Climate Change during the ASTHO Annual Meeting, held just three weeks ago. ASTHO's position

statement compliments the policy and position statements of the Centers for Disease Control and Prevention and the National Governors Association.

The anticipated health effects related to weather and climate change include death and illness from heat waves, injuries from catastrophic events such as hurricanes, tornadoes, and floods, increased air pollution with concurrent rises in respiratory and cardiovascular diseases, detrimental impacts on water quality and quantity, and an increased incidence of vector-, food- and water-borne diseases. Recent climate-related challenges, from extreme weather events to changing patterns of communicable disease, have already demonstrated the critical need to improve public health capacity to identify, prevent, and respond to these threats.

ASTHO recognizes that climate change has serious far-reaching implications for the health of this and future generations. My remarks will focus on (1) the assertion that climate change has the potential to place unprecedented demands upon public health infrastructure in the United States, (2) a need for action to adequately bolster federal, state and local health systems to cope with the present and future challenges of climate change, and (3) urging federal, state and local government bodies, including legislatures, to provide leadership in the development and coordination of sound public health policy to address health impacts related to climate change.

ASTHO acknowledges that there are uncertainties regarding the projected impacts of climate change on health. The actual effects of climate change on population health are influenced by many confounding factors, including socioeconomic status of individuals and communities,

demographic structure of the population, geographical location, access to medical care, and adaptation measures implemented to reduce negative impacts. Recognizing these uncertainties, ASTHO supports decisive action to adequately bolster public health infrastructure to prepare for future challenges.

### **Key Issues and State Examples in the Health Sector**

States continually and effectively respond to weather and climate related events but the systems are being taxed as these types of events appear to occur with increased frequency and with greater severity. I would like to give a few recent state specific examples.

In August of this year, Tennessee experienced a prolonged, severe heat wave which lasted eleven days where temperatures exceeded 100 degrees. This was accompanied by a severe drought. Water systems were severely taxed, resulting in numerous water restriction orders. Power demands led to rolling electrical outages in some areas. Human effects were substantial. Fifteen deaths were reported to be heat-related, fourteen of which occurred in one Tennessee county. An increase in heat related illnesses and injury was also reported. Through surveillance activities and proactive monitoring, the Tennessee Department of Health reached out to communities at risk to provide statewide information on preventing heat-related illness and injury. In addition, the TDOH worked with the Governor's office and other state agencies to identify vulnerable populations and to activate our public health preparedness system to implement mitigation strategies such as providing window air conditioning units to low income

elders and families with children, coordinating water/cooling stations, and opening community shelters for those at risk.

With increased surface water temperatures, states all along U.S. coasts are seeing increases in harmful algal blooms. In 2007, a bloom along the Chesapeake resulted in a major fish kill and threatened oyster farms along the Bay. Blooms not only impact the aquatic life, but can also directly impact human health through shellfish poisoning, skin irritation from direct contact, respiratory distress by inhalation of toxins, and decreased availability of recreational waters.

Algal bloom events also attract significant public and media attention. The Virginia Department of Health works collaboratively with other state agencies and academic institutions on a Harmful Algal Bloom Task force to monitor, respond to and communicate with the public about algal blooms.

In Montana, a state that routinely faces wildfire threats, increasing temperatures will result in more frequent occurrences of large, uncontrolled fires. Wildfires not only pose a direct threat to the health and safety of nearby residents, but also create dangerous levels of particulates in the air, contributing to respiratory distress and failure, and death in many cases. In 2007, the Montana Department of Public Health and Human Services worked closely with the Department of Environmental Quality to issue alerts about air quality and health impacts, aimed particularly at vulnerable populations. The state health agency also utilized the Health Alert Network to communicate with local health professionals throughout the fire season.

## Challenges

In Georgia this year, an extreme drought situation has impacted both the availability of water and paradoxically resulted in an increase in mosquito populations throughout the state. Because of the lack of precipitation, residents are being forced to irrigate and water their lawns and gardens to make up for the drought, creating fertile opportunities for mosquito growth.

Subsequently, human West Nile Virus cases have risen to more than twice the number as were reported in 2006. The public health outcomes and impacts of shifts in weather patterns on individual states and localities is unpredictable and complex. While Georgia saw an increase in West Nile Virus cases with an extended drought, Tennessee saw a 68% decrease in cases as a result of the severe drought and significant water use restrictions. In order to ensure adequate response to protect the public's health with such variations, it is essential that we maintain critical public health surveillance systems and that they be equipped to monitor real-time changes in disease trends.

Climate change may increase the number of known disease vectors, such as mosquitoes and ticks, or expand the geographic range of these disease vectors and their natural reservoirs.

Climate conditions that increase water temperatures, water salinity or nutrient levels would change marine ecosystems along the Texas gulf coast and possibly increase diseases associated with fish and shellfish consumption and swimming. The impact of climatic change on disease occurrence is uncertain. However, to identify any change in disease occurrence, local and state health departments need to maintain disease surveillance activities to detect any changes in disease occurrence and to identify vulnerable subpopulations that would be adversely impacted

by changing climatic changes. .In 2005, the first cases of domestically acquired Dengue Fever were identified in Cameron County along the Texas-Mexico border. The Texas Department of State Health Services conducted an epidemiologic investigation and continues to conduct surveillance for Dengue Fever. In addition to changes in infectious disease patterns, health departments may need to develop new surveillance systems to measure non-infectious diseases such as heat-related deaths and asthma related to decreasing air quality. Maintaining and enhancing disease surveillance systems and having staff to analyze and evaluate information collected by these systems will ensure the detection of disease changes and ensure that appropriate disease intervention and control measures are initiated.

### **Planning and Preparing for Climate Change**

ASTHO advocates strong coordination and collaboration across all tiers of governmental public health to improve understanding of climate change and enable optimal preparation and response to related health impacts. We urge federal, state and local government bodies, including legislatures, to provide leadership in the development and coordination of sound public health policy to address health impacts related to climate change.

ASTHO supports enhancing the ability of federal, state and local health agencies to understand and prepare for the health impacts linked to climate change in their jurisdictions. ASTHO urges the federal government to provide leadership, resources and programs to support state health agencies in developing educational initiatives to raise awareness of the link between climate change and human health among public health professionals and prepare for the potential health

impacts with enhanced planning, surveillance initiatives, and event response. Sustaining funding for public health preparedness will be critical in helping state and local health departments maintain the capacity to respond to climatic and other public health emergencies.

ASTHO supports investment in research to better understand the potential health impacts of climate change and to develop and enhance surveillance and response systems to mitigate health impacts. These efforts should include, but not be limited to, initiating and promoting scientifically based health programs; developing practice standards; identifying promising practices and success stories; developing decision support systems that enable agencies to predict, anticipate and model events; and developing early warning systems that enable rapid response.

ASTHO emphasizes the importance of public health agencies and professionals to inform communities, policy makers, other government departments and industry of the public health impacts of climate change. Public health leaders must be at the forefront of all mitigation and adaptation actions related to climate change. ASTHO encourages public health agencies and professionals to actively engage with all stakeholders to insure consideration of the potential health impacts in all aspects of behavior, consumption and decision making that may contribute to climate change. ASTHO urges public health agencies and professionals to actively promulgate policies towards preventing and mitigating the public health impacts of climatic change.

In closing, I want to again thank the members of this Committee for your past commitment to improving the health, safety and wellbeing of our nation. We know that so much more can be and must be done to protect our nation's health as we continually anticipate and prepare for a myriad of public health threats. We welcome the opportunity to continue to work with you in pursuit of that goal.

Thank you for your attention. I will be pleased to answer any questions you may have.