Testimony
Committee on Environment and Public Works
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Climate Change and Public Health

Statement of

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Introduction

Good morning Madam Chairwoman, Senator Inhofe, and other distinguished members of the Committee. It is a pleasure to appear before you as Director of the Centers for Disease Control and Prevention (CDC), the Nation's leading public health protection agency located within the Department of Health and Human Services. Thank you for the opportunity to present on climate change and human health and to highlight the role of CDC in preparing for and responding to the health effects of climate change.

Background

The health of all individuals is influenced by the health of people, animals, and the environment around us. Many trends within this larger, interdependent ecologic system influence public health on a global scale, including climate change. The public health response to such trends requires a holistic understanding of disease and the various external factors influencing public health. It is within this larger context where the greatest challenges and opportunities for protecting and promoting public health occur.

Public Health Preparedness for Climate Change

Climate change is anticipated to have a broad range of impacts on the health of Americans and the nation's public health infrastructure. As the nation's public health agency, CDC is uniquely poised to lead efforts to anticipate and respond to the health effects of climate change. Preparedness for the health consequences of climate change aligns with traditional public health

contributions, and – like preparedness for terrorism and pandemic influenza – reinforces the importance of a strong public health infrastructure. CDC's expertise and programs in the following areas provide the strong platform needed:

- *Environmental Public Health Tracking:* CDC has a long history of tracking occurrence and trends in diseases and health outcomes. CDC is pioneering new ways to understand the impacts of environmental hazards on people's health. For example, CDC's Environmental Public Health Tracking Program has funded several states to build a health surveillance system that integrates environmental exposures and human health outcomes. This system, the Tracking Network, will go live in 2008, providing information on how health is affected by environmental hazards. The Tracking Network will contain critical data on the incidence, trends, and potential outbreaks of diseases, including those affected by climate change.

- *Surveillance of Water-borne, Food-borne, Vector-borne, and Zoonotic Diseases:* CDC also has a long history of surveillance of infectious, zoonotic, and vector-borne diseases. Preparing for climate change will involve working closely with state and local partners to document whether potential changes in climate have an impact on infectious and other diseases and to use this information to help protect Americans from the potential change in of a variety of dangerous water-borne, food-borne, vector-borne, and zoonotic diseases. CDC has developed ArboNet, the national arthropod-borne viral disease tracking system. Currently, this system supports the nationwide West Nile virus surveillance system that links all 50 states and four large metropolitan

areas to a central database that records and maps cases in humans and animals and would detect changes in real-time in the distribution and prevalence of cases of arthropod-borne viral diseases. CDC also supports the major foodborne surveillance and investigative networks of FoodNet and PulseNet which rapidly identify and provide detailed data on cases of foodborne illnesses, on the organisms that cause them, and on the foods that are the sources of infection. Altered weather patterns resulting from climate change may affect the distribution and incidence of food- and water-borne diseases, and these changes can be identified and tracked through PulseNet.

- *Geographic Information System (GIS):* At the CDC, GIS technology has been applied in unique and powerful ways to a variety of public health issues. It has been used in data collection, mapping, and communication to respond to issues as wide-ranging and varied as the World Trade Center collapse, avian flu, SARS, and Rift Valley fever. In addition, GIS technology was used to map issues of importance during the CDC response to Hurricane Katrina. This technology represents an additional tool for the public health response to climate change.

- *Modeling:* Model projections of future climate change can be used as inputs into models that assess the impact of climate change on public health. CDC has conducted heat stroke modeling for the city of Philadelphia to predict the most vulnerable populations at risk for hyperthermia. In light of these projections, CDC has initiated efforts to model the impact of heat waves on urban populations to identify those people most vulnerable to hyperthermia.

- *Preparedness Planning:* Just as we prepare for terrorism and pandemic influenza, we should use these principles and prepare for health impacts from climate change. For example, to respond to the multiple threats posed by heat waves, the urban environment, and climate change, CDC scientists have focused prevention efforts on developing tools that local emergency planners and decision-makers can use to prepare for and respond to heat waves. In collaboration with other Federal partners, CDC participated in the development of an Excessive Heat Events Guidebook, which provides a comprehensive set of guiding principle and a menu of options for cities and localities to use in the development of Heat Response Plans. These plans clearly define specific roles and responsibilities of government and non-governmental organizations during heat waves. They identify local populations at increased high risk for heat-related illness and death and determine which strategies will be used to reach them during heat emergencies.

- *Training and Education of Public Health Professionals* – Preparing for the health consequences of climate change requires that professionals have the skills required to conceptualize the impending threats, integrate a wide variety of public health and other data in surveillance activities, work closely with other agencies and sectors, and provide effective health communication for vulnerable populations regarding the evolving threat of climate change. CDC is holding a series of five workshops to further explore key dimensions of climate change and public health, including drinking water, heat waves, health communication, vector-borne illness, and vulnerable populations.

- *Health Protection Research:* CDC can promote research to further elucidate the specific relationships between climate change and various health outcomes, including predictive models and evaluations of interventions. Research efforts can also identify the magnitude of health effects and populations at greatest risk. For example, CDC has conducted research on the relationship between hantavirus pulmonary syndrome and rainfall, as well as research assessing the impact of climate variability and climate change on temperature-related morbidity and mortality. This information will help enable public health action to be targeted and will help determine the best methods of communicating risk. CDC can serve as a credible source of information on health risks and actions that individuals can take to reduce their risk. In addition, CDC has several state-of-the-art laboratories conducting research on such issues as chemicals and human exposure, radiological testing, and infectious diseases. This research capacity is an asset in working to more fully understand the health consequences of climate change.
- *Communication*: CDC has expertise in communicating to the general public health and risk information, and has deployed this expertise in areas as diverse as smoking, HIV infection, and cancer screening. Effective communication can alert the public to health risks associated with climate change, and encourage constructive protective behaviors.

While CDC can offer technical support and expertise in these and other activities, much of this work needs to be carried out at the state and local level. For example, CDC can support climate change preparedness activities in public

health agencies, and climate change and health research in universities, as is currently practiced for a variety of other health challenges.

Conclusion

An effective public health response to climate change can prevent injuries, illnesses, and death and enhance overall public health preparedness. Protecting Americans from adverse health effects of climate change directly correlates to CDC's four overarching Health Protection Goals of Healthy People in Every Stage of Life, Healthy People in Healthy Places, People Prepared for Emerging Health Threats, and Healthy People in a Healthy World.

While we still need more focus and emphasis on public health preparedness for climate change, many of our existing programs and scientific expertise provide a solid foundation to move forward. Many of the activities needed to protect Americans from adverse health effects of climate change are mutually beneficial for overall public health. In addition, health and the environment are closely linked. Because of this linkage it is also important that potential health effects of environmental solutions be fully considered.

Thank you again for the opportunity to provide this testimony on the potential health effects of global climate change and for your continued support of CDC's essential public health work.