

Direct from CDC

Environmental Health Services Branch

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During the keynote, at NEHA's 2009 AEC & Exhibition, CDC's Dr. Howard Frumkin will make the case for environmental health's involvement in sustainability and prolonging climate change. See page 7-12 for details.

Addressing Climate Change and Local Public Health: The Austin Climate Protection Program and the CDC Working Group on Climate Change Collaboration

Editor's note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the Journal.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health. EHSB's objective is to strengthen the role of state, local, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health. The services being developed through EHSB include access to topical, relevant, and scientific information; consultation; and assistance to environmental health specialists, sanitarians, and environmental health professionals and practitioners.

The authors are from TKC Integrated Service Consulting (Natasha Prudent), the Centers for Disease Control and Prevention (Maggie Byrne and George Luber), Adele Houghton Consulting (Adele Houghton, who is an Environmental Public Health Leadership Institute Fellow), and the Austin Climate Protection Program (Jake Stewart, Alexander [Sascha] Petersen, and Rachel Thompson).

The conclusions in this article are those of the authors and do not necessarily represent the views of CDC.

In the December 2007 issue of the *Journal*, scientists from the Centers for Disease Control and Prevention (CDC) framed the public health impacts of climate change (Luber & Hess, 2007). They noted that costly catastrophic weather events (Greenough et al., 2001) and vectorborne-disease outbreaks (Gage, Burkot, Eisen, & Hayes, 2008; Greenough et al., 2001; Gubler et al., 2001; Patz, Vavrus, Uejio, & McLellan, 2008) are expected to become more frequent, widespread, and lengthy. The potential health effects of extreme heat (Luber & McGeehin, 2008), respiratory diseases (Kinney, 2008), injuries from extreme weather events (Greenough et al., 2001), and adverse mental health impacts (Balbus & Wilson, 2000) are also of concern. Climate change will threaten traditional public health infrastructure. It will stress environmental health services, such as efforts to respond to severe weather events and disease outbreaks, provide assurance of drinking water safety, and implement vector control measures.

As the reality of climate change becomes apparent, many government entities are taking proactive measures. These measures are broadly defined by two aspects: greenhouse gas emissions reduction (mitigation) and reducing the harm associated with climate change impacts (adaptation) (Frumkin & McMichael, 2008). Mitigation initiatives such as the Cities for Climate Protection (CCP) campaign, sponsored by the International Council for Local Environmental Initiatives (ICLEI, 2008), have developed five milestones in addressing climate change. Participating cities must do the following:

1. conduct a baseline emissions inventory and forecast,
2. adopt an emissions reduction target for the forecast year,
3. develop a local action plan,
4. implement policies and measures, and
5. monitor and verify results.

As cities tackle climate change and its threat to local infrastructure, efforts linked to mitigation as well as adaptation present opportunities (Frumkin & McMichael, 2008) for co-benefits in public health. For example, traditional combined sewage overflow systems that experience heavy rainfall events may discharge contaminants into water bodies, resulting in increased incidence of waterborne diseases (Curriero, Patz, Rose, & Lele, 2001). As cities begin to upgrade sewage systems to reduce their carbon footprints under campaigns like CCP, a more resilient sewer infrastructure that will withstand extreme weather events is enhanced by the co-benefit of reducing incidence of waterborne diseases (Curriero, Patz, Rose, & Lele, 2001; Patz, Vavrus, Uejio, & McLellan, 2008).

The public health effects of climate change are influenced by dynamic interactions among environmental-climatic factors, biological systems, and human elements (Rose et al., 2000). With more than 100 U.S. cities participating in CCP, environmental health practitioners have opportunities to improve public health by integrating public health frameworks, such as the Ten Essential Public Health Services (Frumkin, Hess, Luber, Malilay, & McGeehin, 2008), with existing climate change programs. The framework outlines the following actions:

1. monitor the health status of the community,
2. investigate and diagnose health problems and hazards,
3. inform and educate people regarding health issues,
4. mobilize partnerships to solve community problems,
5. support policies and plans to achieve health goals,
6. enforce laws and regulations to protect health and safety,
7. link people to needed personal health services,
8. ensure a skilled, competent public health workforce,
9. evaluate effectiveness, accessibility, and quality of health services, and
10. research and apply innovative solutions.

In collaboration with the CDC Working Group on Climate Change, the city of Austin's Climate Protection Program (ACPP) is piloting an approach to linking public health and local climate change programs. This project was developed by a fellow in the CDC-sponsored Environmental Public Health Leadership Institute. The incorporation of public health data into evaluation criteria for local climate mitigation strategies is central to this approach. These metrics will take the form of indicators or composite measures of environmental hazards, health outcomes, vulnerability, and policy interventions.

The ACPP-CDC collaboration will incorporate environmental health indicators into Austin's climate plan on two scales: 1) to base projections for the public health impacts of not undertaking any climate change mitigation steps, and 2) to document overall local and regional public health outcomes associated with implementation. The program will use the National Environmental Health Indicators of Climate Change developed by the State Environmental Health Indicators Collaborative, a project of the Council of State and Territorial Epidemiologists.

Through existing structures such as the National Environmental Public Health Tracking Program, ACPP will access data and measures of environmental health status throughout local, state, and federal levels and expand to include measures of vulnerability and climate policy interventions relevant to Austin. The ACPP-CDC collaboration is an initial step in expanding a topic frequently viewed as one dimensional into a multidimensional program with implications far beyond reducing greenhouse gas emissions.

For additional information, visit the following Web sites.

- Austin Climate Protection Program—City of Austin: www.coolaustin.org.
- Cities for Climate Protection Campaign—International Council for Local Environmental Initiatives: www.iclei.org/index.php?id=800.
- Climate Change and Public Health—CDC: www.cdc.gov/ClimateChange.
- Environmental Health Training in Emergency Response (free course)—CDC: www.cdc.gov/nceh/ehs/Resources/EHTER.htm.
- National Environmental Public Health Tracking Program—CDC: www.cdc.gov/nceh/tracking/.
- State Environmental Health Indicators Collaborative—Council of State and Territorial Epidemiologists: www.cste.org/environmentalhealth.asp.
- U.S. Conference of Mayors Climate Protection Center: www.usmayors.org/climateprotection.

ACPP will use the combined data to track progress of its climate mitigation strategies, set future priorities, and identify co-benefits in health among other Austin programs.

The efforts of the ACPP-CDC collaboration demonstrate the importance of “thinking globally while acting locally.” Involving health in local climate change efforts can contribute to global efforts to reduce greenhouse emissions, while simultaneously improving the health of local residents. As more research, better surveillance, enhanced emergency response, and stronger mitigation policies are implemented, environmental health practitioners will form a vital part of a comprehensive response to climate change.

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