

State and Territorial Health Agency Needs for a Changing Climate:

**A Summary and Analysis of ASTHO's 2009 and 2012
Climate Health Needs Assessments**

December 2012

EXECUTIVE SUMMARY

ASTHO supports the widespread scientific consensus that climate change will threaten the basic life systems on which we depend: our water, food, air and shelter. To understand the capacity of state and territorial health agencies (S/THAs) to address the public health ramifications of climate change, ASTHO developed and disseminated a comprehensive electronic needs assessment to all state and territorial health leaders in 2009 and again in 2012. The results of the 2012 survey provided the basis of this report.

Key findings from the 2012 Climate Change Needs Assessment Survey:

- A majority of both senior deputies in state and territorial health departments and state environmental health directors report that climate change has “moderately affected” their state or territory.
- Compared with the results from the 2009 survey, there is an increased awareness about the health consequences of climate change.
- Predictions about the likelihood that climate change will adversely impact public health were similar in 2009 and 2012.
- State and territorial health leaders continue to report the need for educational resources and tools.
- There is a need for increased cross-collaborative work both within the S/THA and between other state agencies.
- As new S/T health leaders take up their posts, there is opportunity to educate and inform them on the importance of planning for and response to the public health consequences of climate change.

INTRODUCTION

The Association of State and Territorial Health Officials (ASTHO) is the national nonprofit organization representing public health agencies in the United States, its territories, and the District of Columbia, and the more than 100,000 public health professionals these agencies employ. ASTHO members, the chief health officials of these jurisdictions, also referred to as state/territorial health officials (S/THOs), formulate and influence sound public health policy and ensure excellence in state-based public health practice. ASTHO's primary function is to track, evaluate, and advise members on the impact and formation of public or private health policy that may affect them and to provide them with guidance and technical assistance on improving the nation's health.

ASTHO's Environmental Health (EH) team supports and strengthens state public health's role in all facets of health protection from environmental health threats by forging sound policymaking through effective communication and coordination, regulation, partnership building, surveillance, and response to improve the collective practice of environmental public health services. These efforts are aimed at ultimately reducing morbidity and mortality associated with environmental health threats in the United States.

BACKGROUND

ASTHO's EH program supports five main focus areas, including built environment (healthy housing, health impact assessments, chemical safety); natural environment (climate change, vector-borne disease, natural disaster preparedness, radiation); environmental health surveillance (CDC's Environmental Public Health Tracking Network, environmental health infrastructure and information technology); food safety; and safe water. It is through ASTHO's natural environment portfolio that this survey was developed and disseminated.

ASTHO supports the widespread scientific consensus that the world's climate is changing, and that climate change has significant impact on human health.ⁱ Climate change will threaten the basic life systems on which we depend: our water, food, air and shelter. Health effects related to climate change include death and illness from heat waves, injuries from extreme weather events, increased air pollution with concomitant rises in respiratory and cardiovascular diseases, water shortages, and an increased incidence of vector- and water-borne diseases.

To understand the capacity of state and territorial health agencies to address the public health ramifications of climate change, ASTHO developed and disseminated a comprehensive electronic needs assessment to all state and territorial health agencies in 2009. The survey was in part designed to provide the Climate Change Collaborative, ASTHO's cross-cutting expert panel, with a research base for moving forward with initiatives designed to help address climate change from a state and territorial health agency perspective.

2009 Climate Change Needs Assessment

The 2009 Climate Change Needs Assessment asked S/THOs to share their perspectives on the following climate change topics: staff expertise, general perceptions, resource needs, and practices. Administered electronically, the 32-question needs assessment focused on the current climate change practices, perceptions, and resource needs of state and territorial health agencies. The survey was in the field from late 2008, to early 2009. S/THOs were asked to personally complete the survey and refrain from having program staff answer on their behalf.

As a follow-up to the 2009 Climate Change Needs Assessment, ASTHO administered two concurrent surveys in January 2012. These surveys were designed to capture state-level changes in climate change perspectives and capacities since the last survey in 2009. The results provided the basis of this report.

2012 Climate Change Needs Assessment

To gain a deeper understanding of climate change programs and capacities at the level where the work is taking place, ASTHO administered the 2012 climate change survey to senior deputies (SrDs) and to state environmental health directors (SEHDs)—see Table 1 for a description of roles. The goal of surveying a different subset of respondents than in 2009 was to gain a high-level, agency-wide perspective of climate change that could be compared to the data captured by the previous survey. To be consistent, ASTHO requested that the survey be completed by the specific target, either SrDs or SEHDs, and not by their program staff. The survey was delivered electronically, but hard copies were also provided for reference.

The 2012 surveys focused on the climate change practices, perceptions, and resource needs of state and territorial health agencies. The surveys also posed questions that would help ASTHO better understand the current ability of state and territorial health agencies to address the potential health impacts of climate change in light of new information and advancements in research since the 2009 survey, including:

- Data and reports from ASTHO and CDC climate change grantees. State health agencies were funded to build their capacity to address the public health consequences of climate change and its implications on human health.
- New tools and resources:
 - CDC's Building Resilience against Climate Effects (BRACE) framework.ⁱⁱ The BRACE model, developed by the [Climate and Health Program](#) at CDC, is a framework for agencies to use in developing climate change adaptation plans.
 - Research from George Mason University and other research bodies.ⁱⁱⁱ



- Council of State and Territorial Epidemiologists' (CSTE) climate change indicators. Climate change indicators can be used to assess human health vulnerability to climate change.^{iv}
- American Public Health Association's (APHA) climate change webinar series.^v APHA hosted a webinar series on climate change that has been translated into a practical guidebook. These sessions brought together experts in the field of climate change to discuss topics such as climate science, health risk communication, and adaptation strategies.

Methods

The 2012 survey questions were vetted and approved by experts in the field, including ASTHO's Climate Change Collaborative, ASTHO/CDC climate change grantees, and ASTHO's Survey Research team. The surveys were also approved by ASTHO's Environmental Health Policy Committee. Most questions were in multiple choice format or on a Likert scale. The survey also asked branching questions, which were used to guide interviewees through different questions depending on their previous answers.

Senior Deputy Survey

The ASTHO Senior Deputies peer group was selected for inclusion in the 2012 needs assessment to gain an agency-wide perspective comparable to the SHO perspective sought on 2009. The SrD survey was comprised of eight questions about overarching climate change perceptions, impacts, and agency capacity.

State Environmental Health Directors Survey

SEHDs were surveyed to drill down on a division-wide, "boots on the ground" perspective on climate change capacity and activities. The SEHD survey was comprised of 23 questions about climate change programs and activities, resource needs, and strategic planning.

Table 1. State and Territorial Health Leaders Selected to Complete ASTHO's 2009 & 2012 Climate Change Needs Assessment Surveys	
State Health Officials	S/THOs are ASTHO's primary members. They are the chief health officials of the states and territories, whose job is to formulate and influence sound public health policy and ensure excellence in state-based public health practice. Half of S/THOs report directly to the governor, and nearly one-third report to the secretary for health and human services. State health officials may also report to administrators or directors of an umbrella agency or directors of the health division of an umbrella agency. ^{vi}
Senior Deputies	SrDs are the second in command to S/THOs and must be prepared to manage and lead at a high level from the beginning of their tenure. To facilitate this, ASTHO has developed a comprehensive executive development initiative for Senior Deputies to include mentoring/networking, development of reference materials and other tangible resources, and online and in-person learning opportunities that parallels and compliments the suite of services we offer to new S/THOs.

State Environmental Health Directors	SEHDs are the management officials in each state/territorial public health agency who direct and oversee the majority of the environmental health programs such as food safety and sanitation, air and water quality, recreational sanitation and safety, waste management, toxicology, and environmental epidemiology and surveillance. SEHDs are designated by S/THOs. ^{vii}
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2012 CLIMATE CHANGE NEEDS ASSESSMENT SURVEY RESULTS

As noted above, the purpose of surveying these groups was to gain a high-level, agency-wide perspective on climate change that could be compared to the perspective captured in 2009. Respondents were asked to provide information on their tenure in their role to allow ASTHO to understand if length of time in the agency might affect their responses.

SrDs from 31 states and territories responded to and completed the survey. Twenty-five have held the SrD position for at least one year, and almost 50 percent reported having been senior deputy at their health department for more than three years.

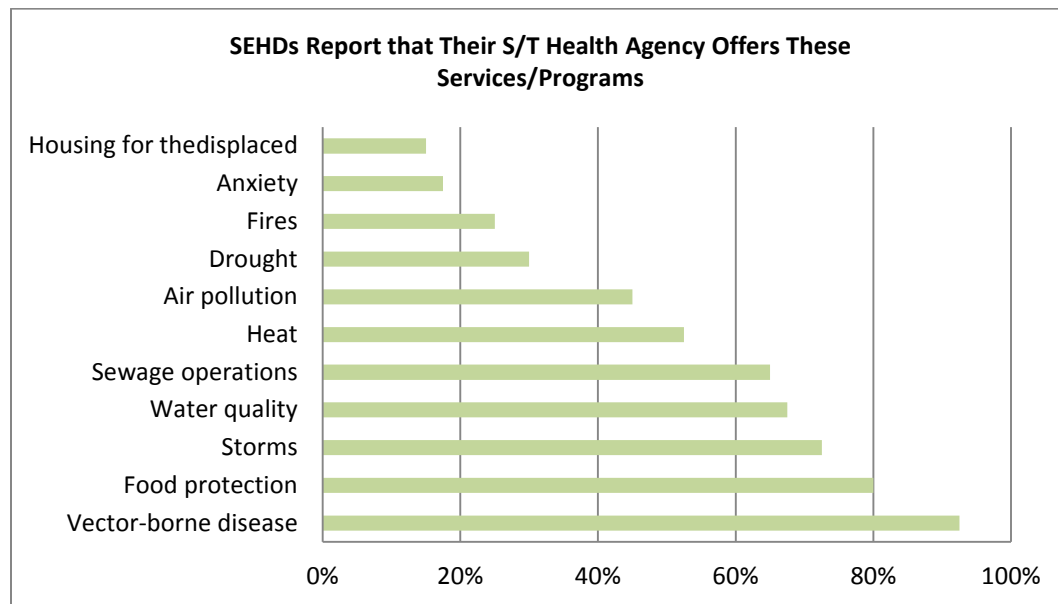
A total of 40 SEHDs participated in their targeted survey. Nearly all (92%) of the SEHDs who responded reported having served as an SEHD for at least one year, and 76 percent (29 out of 38) reported having been an SEHD for more than three years.

Respondent	Years of Service	N
Senior Deputies	<1	6
	1-3	10
	>3	15
State Environmental Health Directors	<1	3
	1-3	6
	>3	29
Table 2. Years of Service in Role		

Self-Reported Knowledge

To better understand the knowledge base for SrDs and SEHDs with regard to climate change, including how this has changed over the past three years, ASTHO included a question capturing this information in the 2012 survey. Eighty-seven percent of SrDs report being “moderately” or “highly” knowledgeable about climate change, and 90 percent of SEHDs reported being “moderately” or “highly” knowledgeable about the public health impacts of climate change. These numbers are consistent with the approximately 98 percent of S/THOs who reported being knowledgeable about the potential health impacts of climate change in 2009.

Current Programming



Almost all SEHDs (93%) reported that their agency currently offers vector-borne disease services or programming. Eighty percent of SEHDs reported that their agency currently offers food protection, food safety, and/or food defense services or programs.

Only 25 percent of SEHDs reported that their agencies currently offer services or other programming to address forest or brush fires, and only six SEHDs indicated that their agency offered housing for residents displaced by extreme weather events.

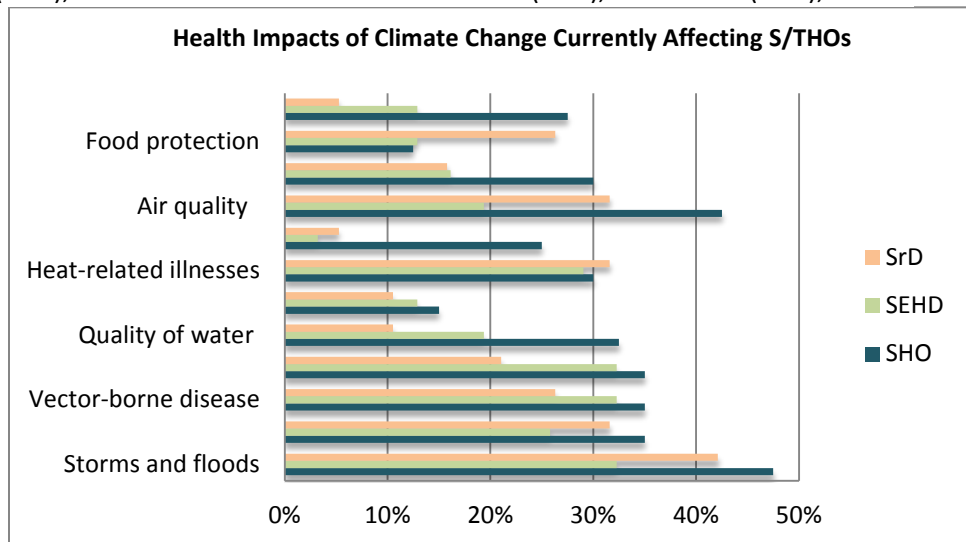
Surveillance Capacity

Overall, the surveillance capacity of state health agencies has remained stable for food, water, and vector-borne disease morbidity and mortality. Eighty-seven percent of SEHDs reported that their state or territory has adequate surveillance capacity for food-borne disease morbidity and mortality; the same number of S/THOs reported this in 2009. The majority (82%) of SEHDs reported that their state or territory has adequate surveillance capacity in vector-borne disease morbidity and mortality, and 67 percent of SEHDs reported that their state or territory has adequate surveillance capacity for water-borne disease morbidity and mortality. This is a slight change from 2009, when 77 percent of S/THOs reported that their state or territory had adequate waterborne illness surveillance capacity.

Impacts of Climate Change

When asked to rate the extent to which climate change had already affected their state or territory, 32 percent of SrDs reported that climate change had not affected their state. Sixty-four percent of SrDs reported that climate change had already had a “moderate impact” on their state. And one SrD responded that climate change had already had an “extreme” impact on their state. Likewise, a majority of SEHDs reported that climate change had affected their state; only 21 percent of SEHDs reported that climate change has had no impact on their state.

The most common health impacts of climate change reported by SrDs included storms (including hurricanes) and floods (29%), heat waves and heat-related illnesses (21%), forest fires (21%), and air quality issues including air pollution (21%). Of the SEHDs who responded that climate change had affected their state or territory, storms (including hurricanes) and floods (32%), vector-borne illnesses (31%), drought (31%), and heat waves (29%) were the most frequently reported health impacts.



In 2009, 48 percent of S/THOs reported that climate change had already affected storms, including hurricanes, and floods, in their state or territory. Forty-three percent of S/THOs reported that climate change had already affected air quality in their state or territory. Other commonly reported health impacts of climate change in the 2009 survey included forest fires (35%), vector-borne illnesses (35%), and drought (35%).

Predictions About Climate Change

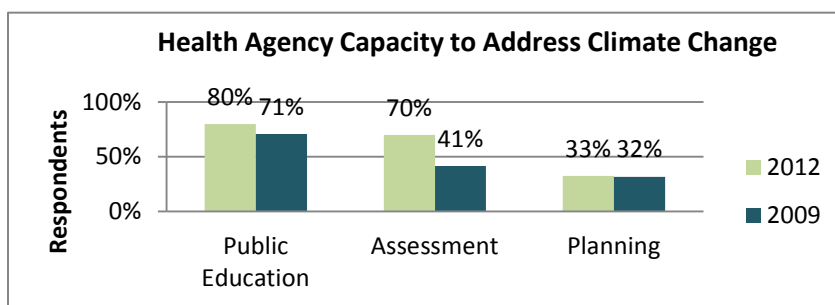
When asked if it was likely that their state or territory would experience one or more serious public health problems as a result of climate change in the next 20 years, 75 percent of SEHDs answered “yes.” Similar predictions were made in 2009, with 73 percent of S/THOs projecting that their state or territory would experience one or more serious public health problems in the next 20 years because of climate change.

Fifty percent of the SEHDs surveyed and 40 percent of SrDs identified storms, including hurricanes and floods, as the potential health impact of climate change that concerns them the most. Heat waves and heat illnesses ranked as the second most concerning health impact of climate change for both SrDs and SEHDs.

Likewise, in 2009, a strong majority of S/THOs indicated that climate change would make several problems more common or severe, in particular: drought and water scarcity (68%), storms (including hurricanes) and floods (65%), and heat waves and heat-related illnesses (60%).

Climate Change Programs and Activities

In 2012, 80 percent of SEHDs indicated that their health department is capable of developing and delivering public outreach tools, education materials, and risk communication messages on climate change as a public health issue. This is another area of capacity improvement from 2009, when only 70 percent of S/THOs reported that their health department was capable of developing and delivering climate change related educational materials.



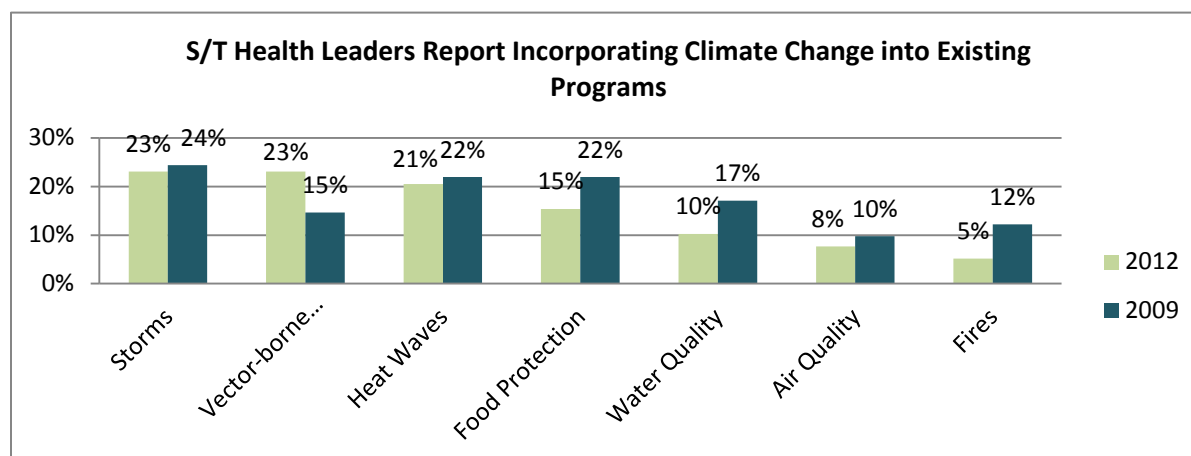
Planning for Climate Change

Strategic Planning

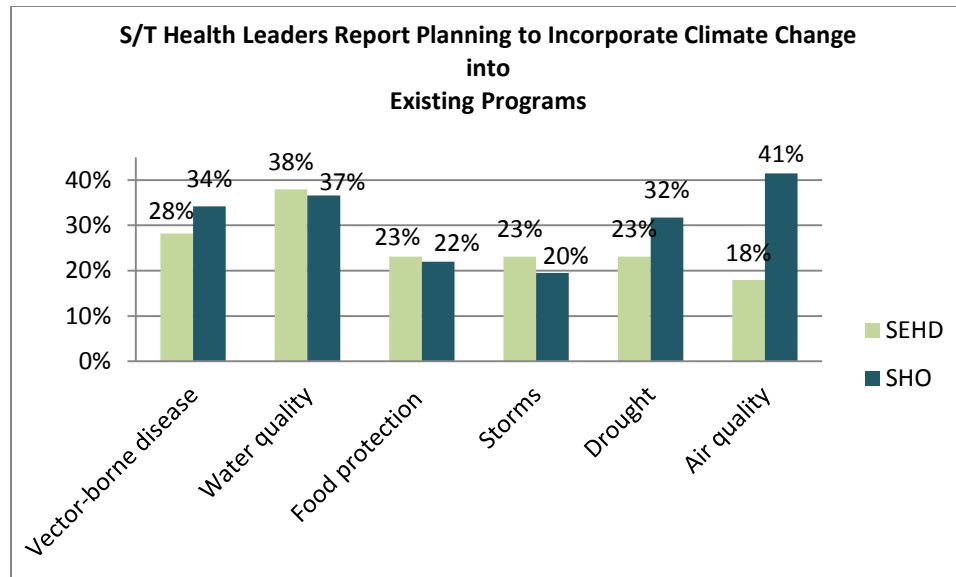
In 2009, almost two-thirds of S/THOs (61%) reported that their health department did not have enough expertise to create an effective climate change plan. In 2012, 67 percent of SEHDs indicated that their health department does not currently have a strategic plan in place. However, it is important to note that 28 percent of SEHDs reported that their agency has or is working on a strategic plan to help address potential health impacts of climate change.

Incorporating Climate Change into Existing Programs

Twenty-three percent of SEHDs reported that their S/T health agency currently incorporates climate change considerations into their storm and vector-borne disease programs. Only 20 percent indicated that climate change considerations are incorporated into heat-related programming.



Twenty-eight percent of SEHDs reported that their health agencies plan to incorporate climate change into air and water quality programs. In 2009, 36 percent of SHOs reported that their agency planned to incorporate climate change into water quality programs.



Opportunities for Collaboration

Approximately 70 percent of SEHDs stated that they were aware of the existence of climate change programs in other state or territorial government agencies, while 64 percent of SEHDs reported being currently engaged with other state or territorial government agencies on their climate change programs. Of the 18 SEHDs who are currently involved with other agencies, three reported participating in [CDC's Environmental Health Tracking grant program](#).

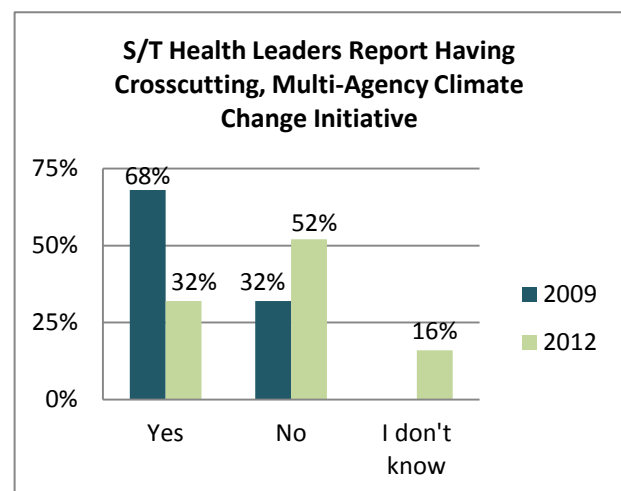
Fifty-two percent of SrDs stated that their state or territory does not have a crosscutting, multi-agency initiative to address climate change. Of the 10 SrDs who reported having a crosscutting climate change initiative in their state or territory, eight specifically identified having an "interagency task force."

In 2009, 25 S/THOs answered the question "Does your state/territory have a crosscutting multi-agency climate change initiative?" Of those, 68 percent reported that their state or territory did have such an initiative. Thirteen S/THOs reported that either they or a representative from their agency is involved with a crosscutting initiative.

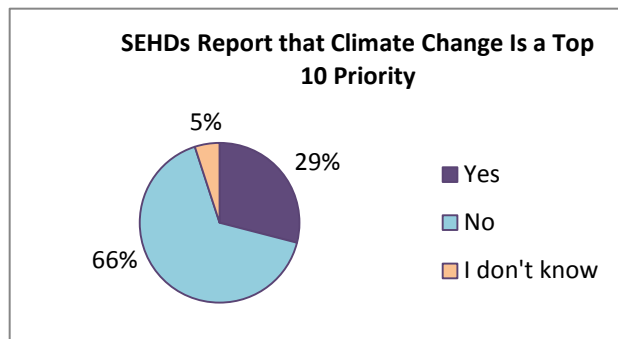
Most (82%) SEHDs reported that their health division is currently or working across departments to contribute to emergency preparedness and response activities related to climate change. Only 28 percent of SEHDs reported that their health department was planning to incorporate climate change considerations into their water safety and vector-borne disease programs.

Climate Change as a Priority Area

Although climate change has become a higher priority for state and territorial health agencies since 2009, it continues to escape the top 10 priorities list for most.

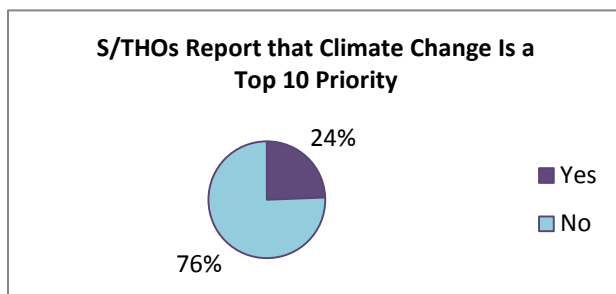


The perception that climate change is a top public health priority has not changed significantly from 2009 to 2012. In 2012, only 28 percent of SEHDs responded that they consider preventing and preparing



for the public health consequences of climate change to be among their health agency's top 10 current priorities. Sixty-three percent of SEHDs reported that climate change is not a top priority for their health agency; the remaining SEHDs answered "I don't know."

Similarly, in 2009, only 24 percent of S/THOs indicated that preventing the health impacts of climate change was a top 10 priority for their health agency, and seventy-six percent of S/THOs reported that it was not.



Resources and Needs

In 2009, 100 percent of S/THOs reported that additional funding would significantly improve their agencies' ability to deal with climate change as a public health issue.

Staff

In terms of workforce, 85 percent of SEHDs said that additional staff would significantly improve their agency's ability to deal with climate change. When asked how many additional staff would improve their capacity, 11 respondents suggested one to two additional full-time employees (FTEs) and six SEHDs recommended adding five or more FTEs. In the 2009 survey, 94 percent of S/THOs asserted that additional staff would significantly improve their ability to deal with the public health effects of climate change. These results are in keeping with the findings from ASTHO's recent survey on S/THA budget cuts.

Federal, state, and local government budget cuts are jeopardizing a decade of significant gains made by S/THAs. Critical S/THA programs and services have been cut or reduced, staff positions have been eliminated, and many staff have been laid off or furloughed. ASTHO has been following this trend since 2008, when it initiated a longitudinal study to investigate the impact of budget cuts on S/THAs and the people they serve. Fifty agencies, 46 states, three territories, and Washington, DC, have reported budget cuts since July 2008, based on the results of the ASTHO Budget Cuts Surveys. With 20 S/THAs reporting budget cuts between July 2011 and June 2012 and two S/THAs reporting budget cuts for the first time

this survey round, funding reductions, while showing slight increases and decreases over time, are not showing any definitive signs of tapering off. Of those states reporting budget cuts in FY 2012, the amount cut ranged from 1 percent to 15 percent, with an average reduction of approximately 4 percent of their current budget.^{viii}

Training

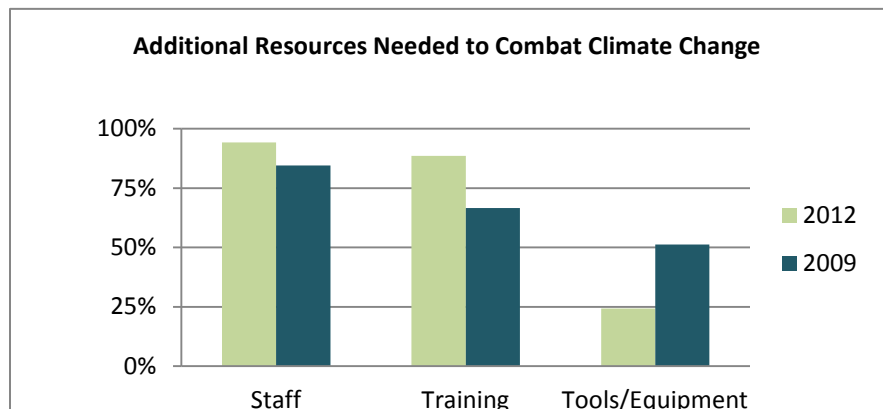
In 2009, nearly all S/THOs (89%) indicated that additional staff training would significantly improve their health agency's ability to deal with climate change. In 2012, 67 percent of SEHDs said that staff training would significantly improve their health department's ability to combat climate change. When asked what specific training would be most helpful, the most frequently reported answer was basic climate change information, including a review of the scientific literature.

Equipment and Tools

A little over half of SEHDs (51%) affirmed that additional "tools" would significantly help their agency combat the public health problem associated with climate change. Specific resources cited included GIS and surveillance tools. In 2009, ASTHO asked S/THOs if additional "equipment" would improve their agency's ability to deal with climate change; twenty-four percent of S/THOs indicated that they would.

Funding

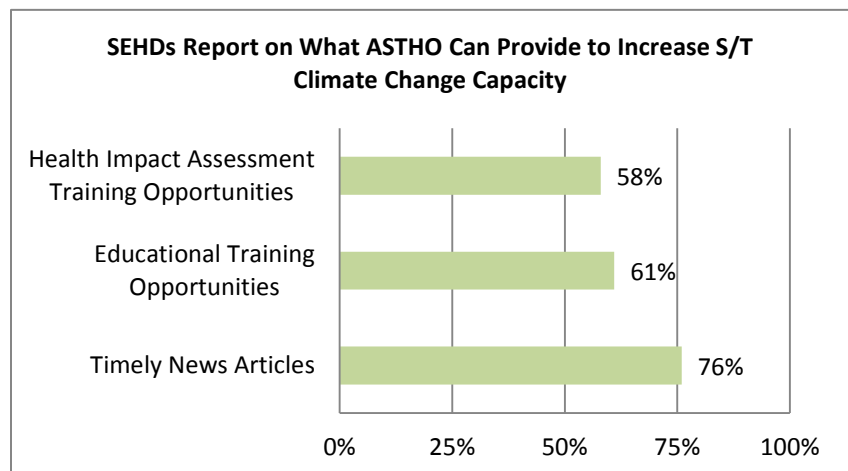
In 2009, all 35 S/THOs reported that more funding would significantly improve their health agency's ability to deal with climate change. Four SEHDs reported that they considered using



funding from another program to pay for climate change work. The programs they considered pulling money from included environmental quality, maternal and child health, environmental public health tracking, preparedness, and chronic disease.

ASTHO's Role in Building State Climate Change Capacity

As the membership organization representing state and territorial health agencies, ASTHO is always looking for ways to better serve our members and help build their capacity in key areas. When asked the best ways ASTHO can help states and territories build their capacity to confront the health impacts of climate change, 76 percent of SEHDs selected "disseminating



newsletter articles on relevant climate change issues,” 61 percent selected “providing training opportunities that include educational presentations on climate change and public health,” and 58 percent selected “providing training opportunities for conducting health impact assessments.”

DISCUSSION

In surveying state and territorial health leaders in both 2009 and 2012, ASTHO has learned that states are already experiencing some health impacts of climate change. The health impacts of storms, including hurricanes and floods, are of most concern. Respondents continue to predict that climate change will make some public health problems more common or severe in the future.

State and territorial health leaders report varying degrees of expertise and capacity to confront climate change. Compared to findings from the 2009 survey, more respondents reported having expertise in assessing the impacts of climate change and capacity to educate the public about the health impacts of climate change in 2012. And, while the findings on the 2012 surveys indicate that climate change has become a higher priority for state health agencies since 2009, it continues to escape the top 10 priorities list for most.

RECOMMENDATIONS

ASTHO urges action to adequately bolster our nation's public health infrastructure to reduce the damage caused by climate change and prepare for future challenges. The effects of climate change on population health are influenced by many factors, including socioeconomic status of individuals and communities, population demographics, geographic location, access to medical care, and adaptation measures implemented to reduce negative impacts.

Recent climate-related challenges, from extreme weather events to changing patterns of communicable disease, have already demonstrated the critical need to improve public health's capacity to identify, monitor, prevent, and respond to climate-related threats. To this end, ASTHO will focus on increasing the level of coordination and communication between the disparate programs involved in addressing the public health consequences of climate change. ASTHO will challenge grant recipients to bring public health to the climate change discussion by engaging diverse stakeholders, including local and tribal health departments; other state agencies such as transportation, education, commerce, and agriculture; and private entities including academic and research institutions, as well as the medical community.

ASTHO's Next Steps

- ASTHO will continue to track and disseminate information on timely climate change science and news via its environmental health newsletters.
- ASTHO will continue to promote the “Position Statement on Climate Change” and climate change grantee factsheets.
- ASTHO will host a webinar series with CDC staff to help S/T health agencies gain a robust understanding and application of CDC's BRACE Framework.
- ASTHO will provide new S/T health leaders information about its climate change work and provide resources to help them combat the public health impacts of climate change.

ⁱ Association of State and Territorial Health Officials (ASTHO). "Climate Change Position Statement." Passed July 20, 2011. Available at www.astho.org/Display/AssetDisplay.aspx?id=143. Accessed 12/21/2012.

ⁱⁱ Centers for Disease Control and Prevention. "Building Resilience Against Climate Effects (BRACE) Framework." Available at <http://www.cdc.gov/climateandhealth/BRACE.htm> . Accessed 12/22/2012.

ⁱⁱⁱ George Mason University. Center for Climate Change Communication Website. Available at www.climatechangecommunication.org/. Accessed 12/21/2012.

^{iv} Council of State and Territorial Epidemiologists. "Discussion Paper for National Climate Assessment: Environmental Health Indicators for Climate Change." Available at www.cste.org/webpdfs/environmental/NCArecommendation22312.pdf. Accessed 12/21/2012.

^v American Public Health Association. Climate Change Webinar Series. Available at www.apha.org/advocacy/reports/webinars/climatewebinars.htm. Accessed 12/21/2012.

^{vi} ASTHO. "Profile of State Public Health, Volume Two." 2011. Available at www.astho.org/uploadedFiles/Publications/Files/Survey_Research/ASTHO_State_Profiles_Single%5B1%5D%20lo%20res.pdf. Accessed 12/21/2012.

^{vii} ASTHO. "State Environmental Health Directors Factsheet." 2011. Available at www.astho.org/Display/AssetDisplay.aspx?id=7234. Accessed 12/21/2012.

^{viii} ASTHO. "Budget Cuts Continue to Affect the Health of Americans: Update December 2012." Available at <http://www.astho.org/budget-cuts-Dec-2012/>.