

BACKGROUND

Anticipated Health Impacts from Climate Change
 (adapted from Frumkin et al 2008, Balbus et al 2008)

Extreme Weather Events

- **Hazards:**
 - Heat waves, storms or floods, droughts, wild fires
- **Health impacts:**
 - Injuries, heat-related illnesses, hypothermia, death
 - Anxiety, depression, other mental health conditions
 - Disruption of health care services
 - Housing displacement

Environmental / Infrastructure Degradation

- **Hazards:**
 - Quality/quantity of drinking water; air quality; sewage/septic breakdown; food safety, security
- **health impacts:**
 - Vector-borne infectious diseases
 - Water- or food-borne diseases

What might be expected for Michigan?

- **Warmer, drier climate:**
 - fires, particulates
- **More frequent severe storm:**
 - injuries
- **More flooding:**
 - water contamination
- **Increased insects:**
 - insect-borne diseases (e.g.. West Nile Virus, Lyme's Disease)
- **Heat events:**
 - hospitalizations, death
- **Ozone, Aeroallergens:**
 - asthma



METHODS (continued)

Key participants

- **Local health departments**
- **Michigan Department of Community Health (MDCH):**
 - Division of Environmental Health,
 - Office of Public Health Preparedness, and
 - Divisions of Communicable and Chronic Disease.
- **Other state government:**
 - Departments of Agriculture and Environmental Quality,
 - State Police, and
 - University of Michigan and Michigan State University.
- **Non-government organizations:**
 - Michigan Public Health Association (MPHA),
 - Michigan Environmental Council,
 - Sierra Club,
 - Ecology Center,
 - Michigan Association of Planners, etc.



Needs Assessment

Involved:

- **34 local health department (LHD) staff interviews,**
 - Mainly health officers and environmental health directors,
 - In-person or via a web-based tool (Survey Monkey).
- **15 in-person key informant interviews,**
 - One-hour structured interviews,
 - With key informants from
 - ✓ State of Michigan Departments of Health, Environmental Quality, and Agriculture;
 - ✓ University researchers looking at climate change;
 - ✓ environmental and health advocacy groups; and
 - ✓ Non-governmental organizations.
- **Review of LHD emergency response plans to identify surveillance data systems.**

RESULTS

LHD survey results

Climate change knowledge and priorities:

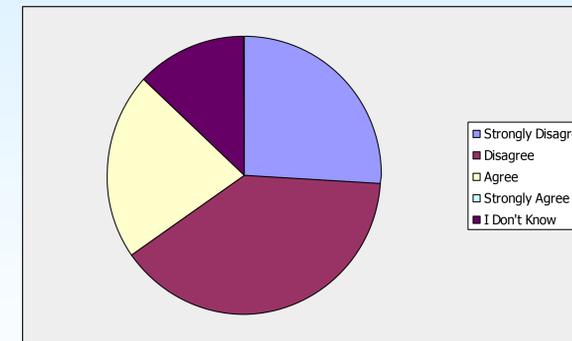
- "I am knowledgeable about climate change": 79% of respondents
- "My jurisdiction will experience PH/CC in next 20 years": 38%
- "CC/PH is one of the top 10 priorities in my agency": 4% (N=1)
- "My agency has the resources to address CC/PH": 30%

RESULTS (continued)

The following are climate change-related conditions that may be affected by climate change. LHDs were asked if it was an area of programmatic activity for their department:

Heat	43%
Storms/floods	61%
Droughts/wildfires	9%
Vector-borne diseases	100%
Water/food-borne diseases	100%
Mental health	9%
Fresh water	96%
Air quality	26%
Health services -special	57%
Sewage/waste	96%
Food safety	96%
Housing - emergencies	17%

Respondents were asked to state whether they 'strongly disagreed,' 'disagreed,' 'agreed,' or 'strongly agreed' with the following statement: "My health department currently has sufficient expertise to create an effective climate adaptation plan."



"Will climate change make these conditions (above) more severe?"

Yes:	28%
No:	41%
Don't know:	31%

Key informant results: Most important issue related to climate change in Michigan:

Water-related themes:	33%
Economics/costs:	27%
Lack of recognition of health effects:	20%

DISCUSSION

Conclusions

- Most LHDs have some climate change knowledge, but have few resources to plan or respond to climate change-related events.
- Respondents are interested in climate change, want to learn more, and want to meet and engage with other organizations.
- All organizations have activities in areas impacted by climate change.
- All feel their organization can contribute to a climate change response by educating partners and their public, and by incorporating climate change into current activities.
- LPH Emergency Response plans are inadequate to respond to climate change-related events.
- MDCH role: leadership and guidance related to climate change information and technical support.

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METHODS

2009 MDCH planning grant

- **1 year of funding to:**
 - Conduct public health needs assessment: knowledge and capacity gaps
 - Create a strategic plan for addressing gaps
 - Provide training to public health practitioners
 - Raise awareness