2018 LOCAL SOLUTIONS: EASTERN CLIMATE PREPAREDNESS CONFERENCE

TAking the drama out of trauma: Climate change and mental health

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Director, Environmental Health Bureau

May 1, 2018
Manchester, New Hampshire
Maryland’s Public Health Strategy for Climate Change
Climate Change Planning in Maryland

Maryland Climate Change Commission

- Advisory commission to Governor and General Assembly
- Aimed to mitigate the causes of, prepare for, and adapt to the consequences of climate change
- All while maintaining and strengthening the State’s existing Greenhouse Gas Reduction Plan.

Work Groups:
- Mitigation Working Group (MWG)
- Adaptation and Response Working Group (ARWG)
- Education, Communication and Outreach (ECO)
- Scientific and Technical Working Group
Maryland’s Climate Action Plan

Comprehensive Strategy for Reducing Maryland’s Vulnerability to Climate Change
Phase I: Sea-level rise and coastal storms

Comprehensive Strategy for Reducing Maryland’s Vulnerability to Climate Change
Phase II: Building societal, economic, and ecological resilience
Public Health Recommendations of the Phase II Comprehensive Plan

- Conduct vulnerability assessments to gain a better understanding of risks and inform preventative responses
- Integrate impact reduction strategies into State and local planning practices
- Streamline and revise data collection and information dissemination channels
Vulnerability Assessment
Maryland Climate and Health Profile Report
April, 2016

Maryland Institute for Applied Environmental Health
University of Maryland School of Public Health
College Park

Prepared for the
Maryland Department of Health and Mental Hygiene


RESEARCH TEAM

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Vulnerability

The degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters. (World Health Organization: Environmental Health in Emergencies)

World Health Organization:
http://www.who.int/environmental_health_emergencies/vulnerable_groups/en/
Asthma Hospitalization Rate by County - Maryland, 2013

Health Vulnerability

Age-Adjusted ED Rate per 10,000
- 25.6 - 28.4
- 28.5 - 50.2
- 50.3 - 74.9
- 75.0 - 133.5
- 133.6 - 216.0
Geographic Vulnerability

Summertime Asthma Rate (per 1000)

Source: Maryland Climate and Health Profile, 2016
Perceptions of Vulnerability to Climate Change

- Having one or more chronic medical conditions
- Being a member of a community of color
- Location in a floodplain
- Lower income

Source: Ackerlof et al., 2015
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4690930/
Engaging with Communities

Who is setting the agenda?

- What questions are being asked?

- Mental health and utilization/availability of mental health resources in the community – may be challenging

Building Resilient Communities in Maryland: A Stakeholder Forum

Do you have ideas about how to improve environmental health in your community? You are invited to discuss your ideas and suggestions, on issues from climate change to asthma, to injuries or other environmental health problems, at the University of Maryland School of Public Health. Make connections with other communities and brainstorm on how to better tackle the task of improving health and preparing for a changing environment.

Register Here
https://building-resilient-communities.eventbrite.com

Friday December 9, 2016
9:00am – 4:30 pm

Grand Ballroom Lounge
Stamp Student Union
Campus Drive, University of Maryland, College Park, MD 20742

Questions?
Allison Gest | 410-767-6661
Allison.gest@maryland.gov
Impact Reduction Strategies
Local Initiatives

- Education
  - Climate Ambassadors
  - Shoring Up Resiliency through Education (Project SURE)
- Outreach
- Extension Training
Communications/Outreach

Maryland Responds to the Health Impacts of Climate Change

How changes in weather could affect your health

As our climate changes, scientists predict that extreme weather events will become more common, more severe, and longer lasting, which may erode recent progress Maryland has made on air quality. We are already seeing some of these changes and they are having an effect on human health, directly and indirectly.

- Hotter weather and extended heat waves mean a greater risk of heat-related events, such as heat stroke, dehydration, and heart attacks.
- An earlier start of spring means a longer pollen season, while wetter weather may increase mold levels in homes. Both of these negatively impact people suffering from allergies.
- More storms may damage infrastructure and reduce healthy living conditions directly (contaminating groundwater supplies) or indirectly (loss of adequate housing in coastal communities).
- More snow and ice events and heavy rains in the fall and winter may increase risk of injuries and motor vehicle accidents.

WHAT IS MARYLAND DOING TO RESPOND TO THESE IMPACTS?

With grant support from the U.S. Centers for Disease Control and Prevention, the Maryland Department of Health and the Maryland Commission on Climate Change are working closely with vulnerable communities, as well as federal, state and local agencies to assess and prepare for the impacts of climate change on public health. Certain communities may be more vulnerable to climate change because of their location or lack of resources.

Under the Clean Air Act, the Maryland Department of the Environment is charged to protect public health from air pollution. Over the past five years, Maryland’s air quality has improved significantly.

Climate change will add new challenges to this effort.

Maryland’s balanced approach to climate change includes improvements to the economy, new and retained jobs, and continued progress in reducing greenhouse gas emissions.

WHAT IS THE STATE OF HEALTH AND CLIMATE IN MARYLAND?

Maryland is already experiencing impacts to human health due to climate change.

In 2016, the Maryland Department of Health and the University of Maryland School of Public Health developed the Maryland Climate and Health Profile Report. The following information from the report is based on data and predictions from multiple sources in Maryland.

EXTREME WEATHER EVENTS: MARYLAND 2000-2012

Realized change between 2000 and 2011 in negative health outcomes for exposure to extreme weather events in Maryland during summer months.

Based on hospitalization data for Maryland during 2000-2012: Summertime extreme heat and precipitations events increased the rate of hospitalization for asthma in Maryland by 22% and 11%, respectively.

In Baltimore City, exposure to extreme heat events increased risk of hospitalization for asthma by 37% during summer months.

WHAT CAN YOU DO TO PROTECT YOUR HEALTH?

- Create an emergency plan and evacuation route for you and your family, including plans for family members with specific health needs; prepare an emergency supply kit.
- Check for updates during extreme weather (snow, ice, flooding); before traveling visit: www.maryland.gov.
- During hotter weather, check on vulnerable neighbors and family members and follow health department recommendations to prevent dehydration and heat stroke.
- Know where the cooling centers are in your area, so you can access relief during heat waves.
- Check the Air Quality Index (AQI) to ensure time outdoors is safe for vulnerable populations.
- Learn more by reviewing the Maryland Climate and Health Profile Report at: https://www.maryland.gov/resources.

For more information, including meetings calendars and contact information, please visit the Maryland Commission on Climate Change website at: www.mde.maryland.gov/mccr.
Training Extension Staff

- Health in a Changing Climate:
  - Agriculture health
  - Home health
  - Healthy living
  - Financial health
  - Food access
  - Resiliency
Mental Health and Natural Disasters

- Federal Emergency Management Agency, state emergency management agencies incorporate behavioral health in their plans
- Finding, allocating resources can be challenging
Mental Health Considerations

- Delivery of mental health services to people with pre-existing conditions in the post-event period
- Identification of individuals with new-onset symptoms
  - People with pre-existing mental health problems may be at increased risk
- Restoring pre-event mental health services
Mental Health and Vulnerable Populations

Prevalence of Physical Health and Mental Health Outcomes Before and After Hurricane Katrina

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Definition</th>
<th>Before Katrina</th>
<th>After Katrina</th>
<th>McNemar Test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMI/SMI</td>
<td>Probable mild-moderate (K6 &gt;7) or serious (K6 &gt;12) mental illness</td>
<td>23.5 [19.3 - 27.7]</td>
<td>37.5 [32.7 - 42.3]</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>SMI</td>
<td>Probable serious (K6 &gt;12) mental illness</td>
<td>6.9 [4.4 - 9.4]</td>
<td>13.8 [10.4 - 17.2]</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-traumatic stress disorder: IES-R average score &gt;1.5</td>
<td>ND</td>
<td>47.7 [42.8 - 52.6]</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>PSS</td>
<td>Perceived stress scale &gt; 7</td>
<td>20.2 [16.2 - 24.1]</td>
<td>30.9 [26.3 - 35.4]</td>
<td>&lt;.001</td>
<td></td>
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<tr>
<td>FPH</td>
<td>Fair or poor self-rated health status</td>
<td>12.8 [8.8–15.2]</td>
<td>19.1 [15.1–22.9]</td>
<td>&lt;.01</td>
<td></td>
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<tr>
<td>HC</td>
<td>At least one diagnosed health condition</td>
<td>61.2 [56.4–66.0]</td>
<td>66.6 [61.9–71.3]</td>
<td>&lt;.05</td>
<td></td>
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<tr>
<td>OVERW</td>
<td>Body mass index (kg/m²) &gt;25</td>
<td>67.1 [62.4–71.7]</td>
<td>72.9 [68.6–77.4]</td>
<td>&lt;.01</td>
<td></td>
</tr>
</tbody>
</table>

Note. P-value is from a t-test of the hypothesis that the change is equal to 0. CI = confidence interval; IES-R = Impact of Event Scale-Revised; ND = not determined; NA = not applicable.

Mental Health Issues Can Be Persistent

Rates of depression, anxiety, PTSD increase in widespread flooding:

English floods of 2013-2014:

<table>
<thead>
<tr>
<th></th>
<th>Depression (%)</th>
<th>Anxiety (%)</th>
<th>PTSD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flooded</td>
<td>20.1</td>
<td>28.3</td>
<td>36.2</td>
</tr>
<tr>
<td>Disrupted</td>
<td>9.6</td>
<td>10.7</td>
<td>15.2</td>
</tr>
<tr>
<td><strong>Two Years</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flooded</td>
<td>10.6</td>
<td>13.6</td>
<td>24.5</td>
</tr>
<tr>
<td>Disrupted</td>
<td>4.1</td>
<td>6.4</td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Unaffected</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>2.9</td>
<td>0.0</td>
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</tbody>
</table>

Data Collection and Information Dissemination
Environmental Public Health Tracking Portal

- Climate indicators
- Indicators relevant to communities
  - Social determinants
  - Life expectancy
  - Current health
  - Exposure disparities
- Implications for Mental Health
Conclusions

- Value of integrating discussions about climate change, all disasters, community preparedness, and local community resiliency
- Meeting communities where they are, even if the topic isn’t what you were hoping to discuss.
- Mental health preparedness – make sure you have mental health resources
Acknowledgments

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References

