Minnesota Assesses Climate Risk to Public Health

Minnesota's Strategic Adaptation Plan (2010) identifies public health threats from climate change and states the necessity of improving its public health system's capacity to respond to these threats, particularly for vulnerable populations. Minnesota's health department worked with CDC's Building Resilience Against Climate Effects program to develop a vulnerability assessment (VA) to better understand (e.g., where health conditions might worsen due to climate change) and characterize the state's composite climate hazard risk. The assessment enabled the state to identify the counties facing the most significant climate risks based upon threats from extreme heat, outdoor air quality, vector borne diseases, as well as water quality and quantity concerns.

The assessment also led the state to downscale vulnerability and other climate information to make it more accessible and applicable for regional use. To facilitate local action within vulnerable regions, Minnesota provides tools and resources to local municipalities to better prepare residents and reduce the climate-related public health threat. Minnesota's resiliency tools, some examples of which are the "Extreme Heat Toolkit" and a Climate 101 Training, are available to increase the adaptive capacity within vulnerable counties as they anticipate and prepare for the future. Through such resources and actions noted above, Minnesota is helping its public health system -- public health professionals, healthcare providers, and other health officials -- better anticipate and prepare for future climate risk and reduce projected vulnerabilities.

How did they do it?

Developed a public health Strategic Adaptation Plan

- The Department of Health established a climate change workgroup comprised of senior management and subject matter experts from different health agency programs, among those were officials from divisions specializing in environmental health, emergency preparedness, public health labs, epidemiology and health tracking, family health, infectious disease, pollution control, and vulnerable population health divisions.
- Minnesota developed a public health plan that focused on climate risks from six main pathways:
  - extreme heat events
  - extreme weather events
  - vector-borne diseases
  - air pollution and allergens
  - water quality and quantity
  - waterborne and foodborne diseases
- Several research gaps were identified, among them the need to conduct a vulnerability assessment, the need to better identify and outreach to vulnerable populations, and the need for additional research on the complex relationship between climate change and fine particulate matter (PM) (for more on the national status of this research please visit the EPA's Air Quality and Climate Change Page).
  - EPA's Air Quality and Climate Change Page

Applicable EPA Tools

Use the National Climate Assessment to better understand the range of projected climate threats to each region and inform adaptation plans.

National Climate Assessment

Developed a risk map showing both vulnerable populations and county threat prevalence

- Worked through CDC's Building Resilience Against Climate Effects Program to develop a “Profile Report” that shows the composite climate hazard risk map for the state.
  - Building Resilience Against Climate Effects Program
- The map indicates at the county level, the most significant climate threats from the six main pathways.

CDC's Assessing Health Vulnerability to Climate Change helps identify the most at risk populations, including the elderly, infirm, and communities dealing with public health and environmental justice challenges.

Assessing Health Vulnerability to Climate Change (PDF) (24 pp, 4.3 MB)

* (This is a non-EPA resource from the Centers for Disease Control and Prevention.)

Provided tools for community use and recognized additional need for community level information

- Minnesota provides tools and resources such as its Extreme Heat Toolkit and Climate Change 101 Training, to local municipalities and health departments to help them better prepare for public health impacts.
- Minnesota Climate And Health Profile Report 2015 acknowledges that further vulnerability assessments are needed "…at finer geographic levels to help public health departments and others plan for the impacts of climate change."

The US Climate Resilience Toolkit Health Vulnerability: Climate Change Guide For Health Departments can help support local preparedness measures.

Health Vulnerability: Climate Change Guide For Health Departments

Similar Cases and More Information

Remember, public health concerns can disproportionately affect at-risk or vulnerable communities. To view a case study that identifies and actively engaged vulnerable communities in adaptation planning for heat events, view Chicago Heat Emergency Response. To see how a community has used green infrastructure to both reduce the impact of future extreme heat events -- and reduce stormwater runoff during extreme precipitation events-- view Chicago Green Infrastructure to Reduce Heat. Or for another case on assessing vulnerability to public health and air concerns, view the Massachusetts Indoor Air Survey.