Extreme Weather Changes Health

Reserve Citizen Airmen deliver aid to Hurricane Maria survivors

By Tech. Sgt. Peter Dean, 927th Air Refueling Wing / Published September 25, 2017


Texas Army National Guardsmen help residents affected by flooding caused by Hurricane Harvey in Houston, Aug. 27, 2017. Army National Guard photo by Lt. Zachary West.
Normal weather can also influence health exposures and behaviors:

Researchers are learning more about weather and health associations:

**Association between heavy precipitation events and waterborne outbreaks in four Nordic countries, 1992-2012.**

Guzman Herrador B¹, de Blasio BF², Carlander A³, Ethelberg S⁴, Hygen HO⁵, Kuusi M⁶, Lund V⁷, Löfdahl M⁸, MacDonald E⁹, Martinez-Urtaza J⁹, Nichols G¹⁰, Schöning C³, Sudre B¹¹, Trönnberg L³, Vold L¹, Semenza JC¹¹, Nygård K¹.

**The Impact of Extremes in Outdoor Temperature and Sunshine Exposure on Birth Weight.**

Poeran J, Birnie E, Steegers EA, Bonsel GJ.

**Thunderstorm-related asthma attacks.**

D'Amato G¹, Annesi Maesano I², Molino A³, Vitale C⁴, D'Amato M³.
History won’t predict the future as well as it once did.

Climate change will destabilize patterns and norms, with consequences for health and public health operations.

Weather data may give public health an extra measure of control in an increasingly uncertain environment.

GOAL:
Spur interest in & lower barriers to using weather data in public health practice.

PRESENTATION & DISCUSSION OBJECTIVES:

1. Weather data: practical value for public health now; part of a climate-ready public health system in the future.

2. Illustrate practical application of weather data use in the context of public health operations in three programs.

3. Explore state of weather data use public health in NW:
   a. Current extent
   b. Opportunities
   c. Hurdles

4. Novel partnerships that can help optimize use
Weather can inform Essential PH Functions

- Understand risk and exposure retrospectively
- Examine changing seasonality of risk factors
- Use forecasts to inform early detection and response systems
- Predict risk & surge; forecast windows of opportunity?
- Plan (and budget) workforce capacity needs
- Enhance health promotion/protection messaging timing
- Model future risk/burden of climate-sensitive health conditions
Experience & Opportunities?

- What are others’ experiences applying weather data in a public health context?
- What health conditions or risk/protective factors could be weather-sensitive, and useful to explore?
Identify Hurdles &
Gauge Interest in
Partnerships

- What are some of the hurdles for public health practitioners in using weather data in surveillance, analysis, planning or response functions more widely?
- What are the challenges to partnering between public health practice and meteorological experts?
- What kinds of projects can bring public health decision makers together with weather experts?
Resources

- NOAA National Weather Service (www.cpc.ncep.noaa.gov)
- NOAA RISA Climate Program Office (cpo.noaa.gov)
- Western Regional Climate Center (wrcc.dri.edu)
- NCAR Research Applications Laboratory (https://ral.ucar.edu)
- WSU AgWeatherNet (weather.wsu.edu)
- National Integrated Drought Information System (NIDIS) Drought.gov: tools for viewing current conditions, outlooks, impacts of drought, as well as other indicators
- NW Interagency Coordination Center - various weather related decision making tools (gacc.nifc.gov/nwcc/predict/weather.aspx)
- NW Climate Toolbox (climatetoolbox.org)
- DOH Washington Tracking Network (www.doh.wa.gov/WTN)
  - Indicators: extreme heat, heavy precipitation from 2000-2016
  - Data Notes provide primer on weather data sources
- RHINO - Washington’s syndromic surveillance system
Washington Tracking Network (www.doh.wa.gov/WTN)

Heavy Precipitation Days (Rain/Snow/Hail)

Geography: Census Tract, Year: 2016
RHINO Dashboard
DOH Syndromic Surveillance

Emergency Department Visits for a Chief Complaint Indicating a Motor Vehicle Collision in CDC Weeks and Average Snow Depth in Inches in Washington State, 2016-2017
Next steps

Wanted:
- Perspectives on “current state” of weather data use in public health in the northwest and elsewhere
- Ideas re: weather data uses with a public health application
- Partnerships & pilot funding that help us get there
- Interests re: training on meteorological data use / application

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