Climate Change & Health Equity

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Alliance of Nurses for Healthy Environments

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Mission: Promoting healthy people and healthy environments by educating and leading the nursing profession, advancing research, incorporating evidence-based practice, and influencing policy.

ANHE Workgroups

Practice

Policy & Advocacy

Education

Research

"Climate change is the biggest global health threat of the 21st century… The impacts will be felt all around the world – and not just in some distant future but in our lifetimes and those of our children."

The Lancet Commission on Health and Climate Change, 2015

National Climate Assessment

- Mandated by the Global Change Research Act of 1990
- Quadrennial assessment
  - Analyzes global changes & impacts on various sectors
  - Analyzes current trends and projections
- Volume I released November 2017
- Volume II released in draft form; final release late 2018.

Reference: USGCRP, 2017

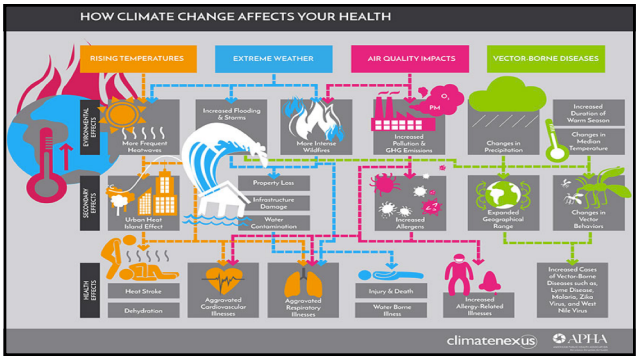
National Climate Assessment

Reference: USGCRP, 2017, 2014; Image: NASA, 2017

NCA4: Volume II

- Strong regional focus
- Separate section with health content
- Health woven throughout several sections
- Economic analysis
- Case studies
- No evaluation of policy or policy recommendations

Reference: USGCRP, 2017



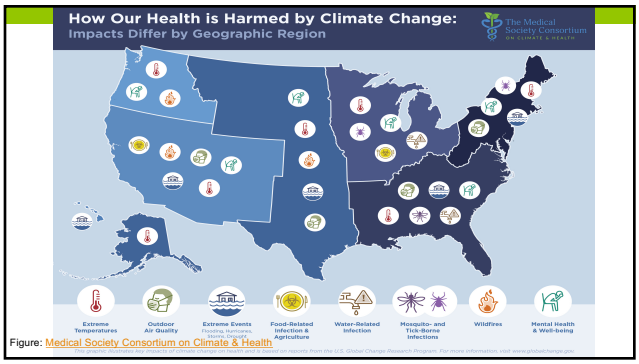


Figure: Medical Society Consortium on Climate & Health

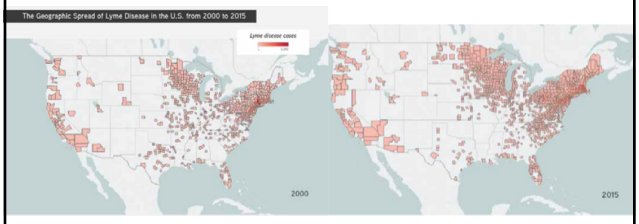
Lancet Countdown: Tracking Progress

Key Findings from 2017 Report

- Climate change is affecting health globally
- Delay in action has threatened human life and livelihoods
- Transition to less carbon intensive energy sources is increasing

Reference: Lancet Countdown Tracking Progress on Health & Climate Change, 2017

Lancet Countdown: Tracking Progress



Figures: Lancet Countdown Tracking Progress on Health & Climate Change, 2017; Data from the CDC

Lancet Countdown: Tracking Progress

Hurricane Harvey
Image: SC National Guard, 2017

Thomas Fire
Image: Forest Service Photo by Kari Greer, 2017

Hurricane Maria
Image: Roosevelt Skerrit, 2017

2018 CA Mudslides
Image: U.S. Coast Guard, 2018

Populations of Concern

Vulnerability to the Health Impacts of Climate Change at Different Life Stages

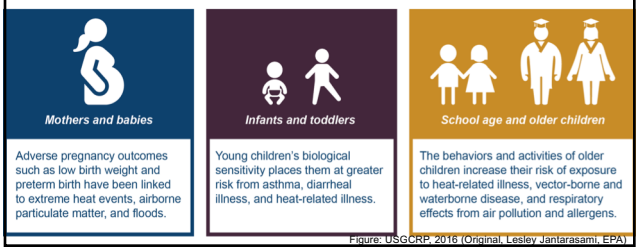


Figure: USGCRP, 2016 (Original, Lesley Jantarasami, EPA)

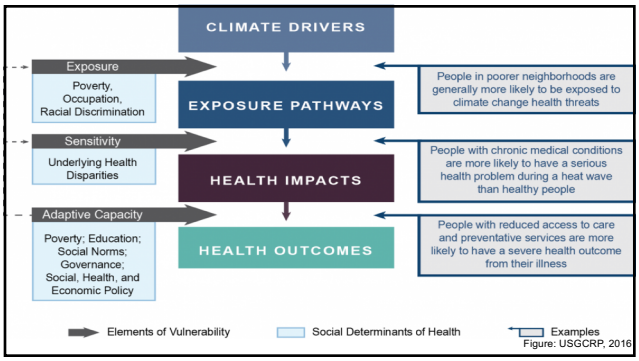


Figure: USGCRP, 2016

Climate Change & Health Disparities

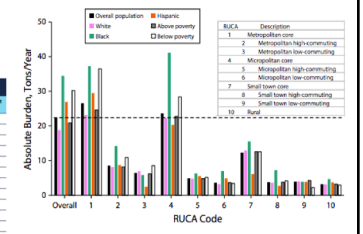
Existing Health Conditions	• Heart disease • Diabetes • Asthma • COPD • Mental Health
Social Determinants of Health	• Geographic location • Occupation • Access to care • Socioeconomic status

Air Quality

Table 1: Hispanic population in the 15 U.S. urban areas most polluted by ground-level ozone, a key component of smog.* (MSA: Metropolitan Statistical Area; CSA: Combined Statistical Area)

2016 Rank	State	Urban Area	Estimated Number of Hispanic Individuals in 2014	Estimated Percent Hispanic in 2014
1	CA	Los Angeles–Long Beach CSA	6,529,515	46
2	CA	Bakersfield MSA	458,025	52
3	CA	Visalia–Porterville–Hanford CSA	368,256	51
4	CA	Fresno–Madera CSA	588,537	53
5	AZ	Phoenix–Mesa–Scottsdale MSA	1,936,233	30
6	CA	Sacramento–Roseville CSA	930,150	21
7	CA	Modesto–Merced CSA	387,910	43
8	CA	Denver–Aurora CSA	752,355	22
9	NV, AZ	Las Vegas–Henderson CSA	885,488	29
10	CO	Fort Collins MSA	36,038	8
11	TX, OK	Dallas–Fort Worth CSA	2,020,440	27
12	CA	El Centro MSA	47,940	82
13	CA	San Diego–Carlsbad MSA	1,003,028	33
14	NY, NJ, CT, PA	New York–Newark CSA	5,544,577	23
15	TX	Houston–The Woodlands CSA	2,400,700	38
		TOTAL	24,885,990	32

Figure: Quintero et al., 2016



Note: PM2.5 = particulate matter of 2.5 micrometers in diameter or less; RUCA = rural–urban commuting area. Dashed line indicates mean overall burden for all groups in the United States (22.4 tons/year). The US Department of Agriculture defines and assigns RUCA codes. Poverty level determined by the US Census Bureau in 2013.

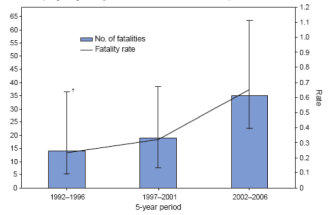
FIGURE 2—RUCA-Stratified Absolute Burdens of $PM_{2.5}$ Emissions From Nearby Facilities in the 2011 National Emissions Inventory, Further Stratified by Race/Ethnicity and Poverty Status: American Community Survey, United States, 2009–2013

Figure: Mikati et al, 2018

Occupational Risk

Image: Holgerhubbs, 2008

FIGURE. Number and rate* of heat-related deaths among crop workers, by 5-year period — United States, 1992–2006



* Per 100,000 workers. Rates calculated using annual national average estimates of employed civilians aged ≥15 years based on the Current Population Survey.
† 95% confidence interval for fatality rate.

Figure: CDC, 2008

Geographic Location

- Sea level rise
- Hurricanes and storm surges
- Flooding
- Infrastructure damage
- Economic impacts
- Health risks

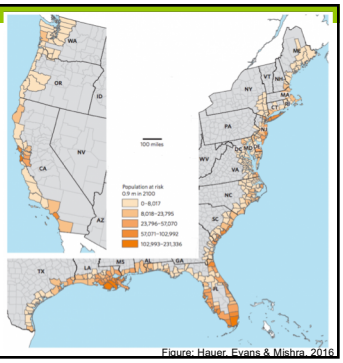


Figure: Hauer, Evans & Mishra, 2016

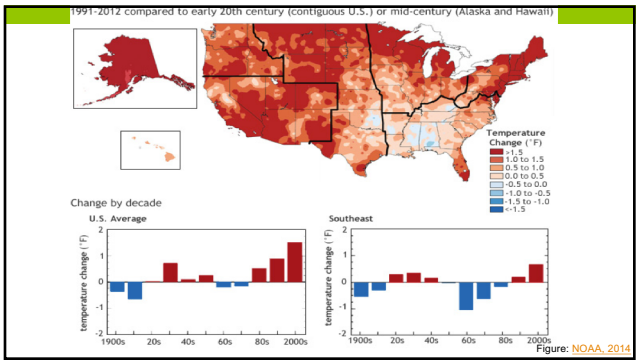


Figure: NOAA, 2014

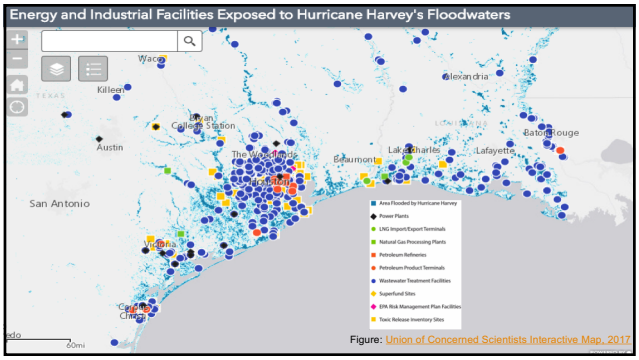


Figure: Union of Concerned Scientists Interactive Map, 2017

Nurses: Opportunity for Action

Why Nurses, Climate & Health?

U.S. Views on Honesty and Ethical Standards in Professions

Please tell me how you would rate the honesty and ethical standards of people in these different fields -- very high, high, average, low, or very low?

	% Very high or high	% Average	% Very low or low
Nurses	80	17	2
Medical doctors	65	29	7
Pharmacists	65	28	7
Police officers	48	31	20
Clergy	46	35	13
Bankers	23	49	26
Lawyers	21	45	34
Business executives	17	50	32
Advertising practitioners	10	44	42
Car salespeople	8	46	45
Members of Congress	7	30	61

Dec. 8-11, 2014
Rated in order of % Very high or high

GALLUP

ANA Code of Ethics: Provision 8

- "Nurses ***must address*** **the context of health**, including social determinants of health…"
- "Nurses ***must lead collaborative partnerships*** to develop effective public health legislation, policies, projects, and programs that promote and restore health…"
- "Nurses ***advocate*** **for public policy** that utilizes the precautionary approach that focuses on *prevention* of hazards to people and to the natural environment."

Reference: ANA, 2015

Health professionals have a responsibility to learn about the health impacts of climate change, educate others about impacts, and advocate for solutions.

Nursing Collaborative on Climate Change & Health

Climate & Health Program: Goals

1. Put America on a path to a positive future that will **protect health and support healthy communities.**

2. Create and support solutions that improve health and build sustainable prosperity, resilience, and response of the health sector and communities.

3. Lead the nursing profession by furthering education and engaging colleagues, communities, health facilities, the public and policymakers.

Nursing Collaborative: Commitment into Action Collective Impact & Improved Health

Elevate Climate Change as a Visible Priority	Develop and Support Climate Literate Nurses	Build Collective Support and Action for Solutions	Engage Nurses, Communities & Policymakers
Show leadership on climate action across nursing organizations as a health priority	Provide resources and incorporate climate change into nursing education and communications	Bring together nurse leaders and host forums and events to engage nurses on collective action	Connect climate change and human health to engage communities, patients, nurses, policy-makers, and the public

PUBLIC HEALTH NURSING 3.0: TIME FOR AN UPGRADE

BRACE Framework

1. Anticipate Climate Impacts & Assessing Vulnerabilities
2. Project the Disease Burden
3. Assess Public Health Interventions
4. Develop & Implement a Climate & Health Adaptation Plan
5. Evaluate Impact & Improve Quality of Activities

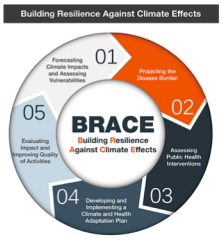


Figure: CDC, 2015

Climate Action Plan: Columbia, MO

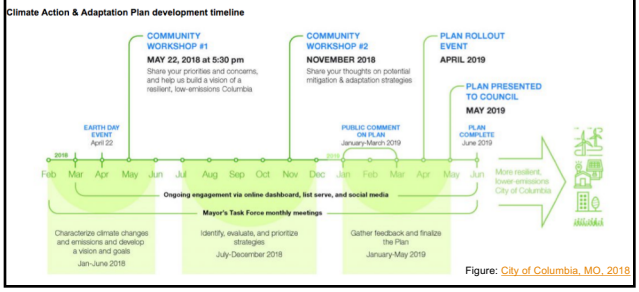


Figure: City of Columbia, MO, 2018

Nurses for Cool & Healthy Homes

Image: Jim Johnson, 2017

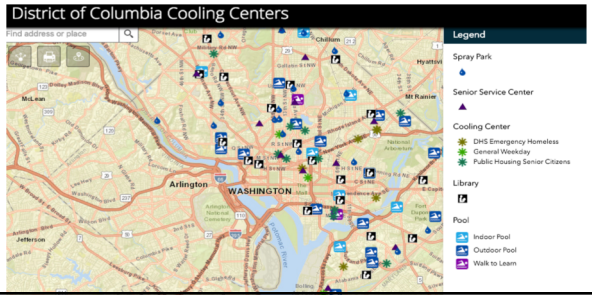
- Fresno County Department of Public Health
- Home Heat Vulnerability Assessment
- Leadership buy-in
- Training of PHNs

Extreme Heat: Green Roofs

Image: TonyTheTiger, 2008

Image: Conservation Design Forum, 2015

Extreme Heat: Cooling Centers



Disaster Preparedness & Response

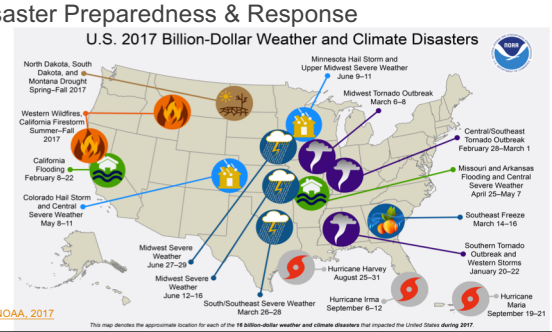


Image: NOAA, 2017

Climate Change & Water Infrastructure

Image: EPA, 2017

Image: © Shutterstock/Muratar

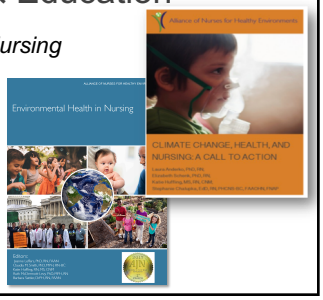
Image: © Shutterstock/Linda Parton

Image: EPA, 2017

Harmful Algal Blooms (HABs)

Climate Change & Education

- *Environmental Health in Nursing*
  - AJN 2017 BOTY Award
  - 2nd Ed. in progress
- Integration into curriculum
  - Publications
  - Recommendations



Strategies for Incorporating Climate Change into Nursing Curricula

Specific Classes/General Content Areas in Nursing Curricula	Appropriate Climate related Content	Teaching Strategies, Resources, and Competencies (ex. readings, questions, assessments, case studies, research articles, PowerPoints, webinars, videos,etc.)	Nursing Concepts Related to Climate Related Climate Related, Competencies (ANA & ICN)
Fundamentals in Nursing (Introductory course)	Environment in Nursing Introduce a social determinants of health approach to nursing assessment and practice	Nurse as a role model: What is the student's carbon footprint? Does the facility they are working in have a green team? Does the facility consider climate change/sustainability as part of its mission? Does the clinical agency examine its carbon footprint? Lifecycle of supplies: Where do supplies come from and where to they end up? Incorporate safety issues related to disaster preparedness into practice. National Climate Change Assessment: http://www.globalchange.gov/climate-change Carbon Footprint Calculator: http://www.nature.org/greenliving/carboncalculator/index.htm	Assesses the environment to identify risk factors. Promotes a safe and healthy workplace and professional practice environment. Participates in strategies to promote healthy communities and practice environments.

Website: https://envirn.org/strategies-for-incorporating-climate-change-into-nursing-curricula/

www.climateandhealthtoolkit.org

Political Action: Advocacy

- Social and political advocacy is just another form of caring. (Morrell, D. 2005)
- Nurses need to speak out on issues related to nursing and the health of the public. (Abood, 2007)

Climate & Health Nursing Advocacy

- Meetings with legislators
- Phone calls
- Individualized emails/letters
- Letter to the editors
- Opinion Editorials
- Postcards and petitions
- Blogs
- Social media
- Testimony at hearings

Image: Working Nurse

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Questions?

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