

Climate Change & Nursing: SOS!



2023 NLN Education Summit

Friday, September 29, 2023

3:00 pm - 3:45 pm

Gaylord National Resort & Convention Center

National Harbor, MD

Who We Are.



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Accreditation & Disclosure Statements.

Financial Relationships: The program faculty report they do *not* have financial relationships with any manufacturer of any products discussed in the activity.

Commercial Support: This educational activity has *not* received any form of commercial support.

Abstract Recap.

This session will present initial findings from a 2022 qualitative research study designed to identify the best pedagogy practices in nursing education about climate change and environmental health.

The study design leveraged Jamboard™ and crowdfunding concepts to identify content, active learning strategies, assessment tactics, and simulation opportunities.

Examples of activities will be showcased in a “toolbox” of resources you can take back to your practice setting.

Learning Outcomes.

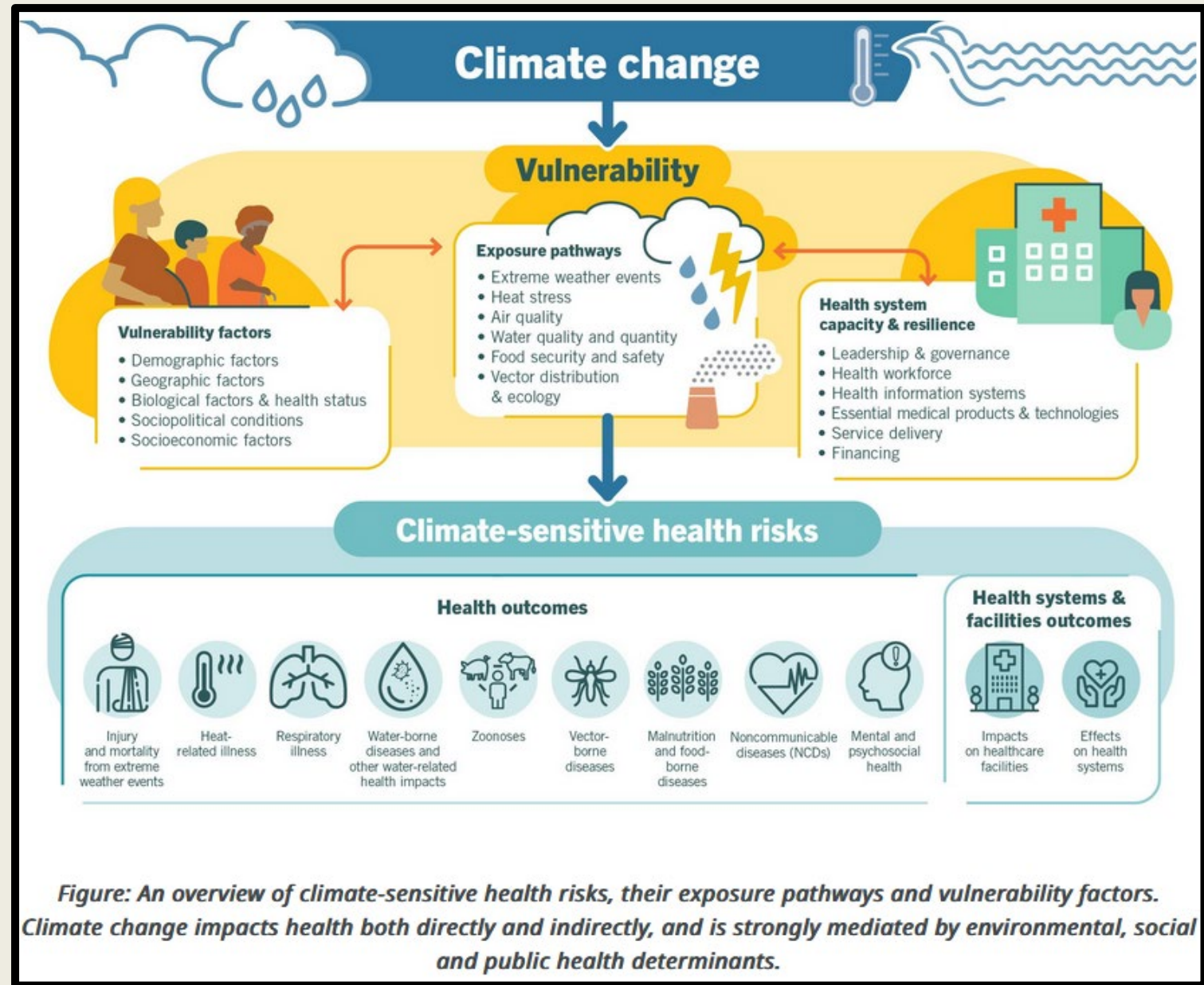
- Describe the nurse's role in prevention, mitigation, and treatment of the effects of climate change.
- Identify at least three (3) impacts on health as a result of climate change.
- State one (1) teaching strategy that can be incorporated into an existing course.



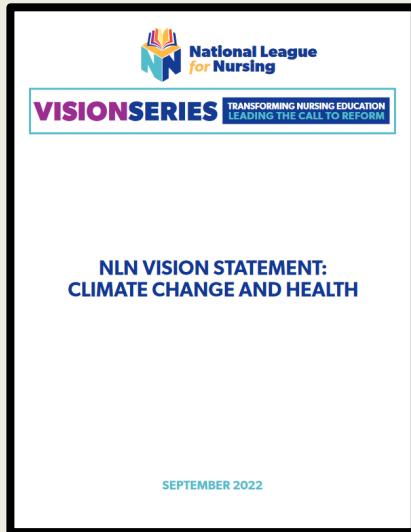


Climate Change 101.

Climate Change: Impact on Health.

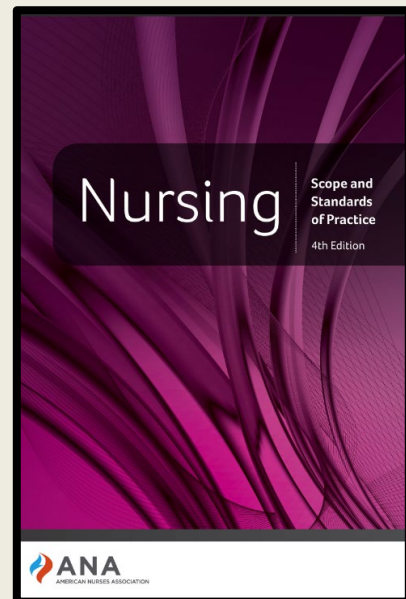


Guiding Principles.



National League for Nursing (NLN)

Vision [Statement](#) on Climate Change and Health (2022)

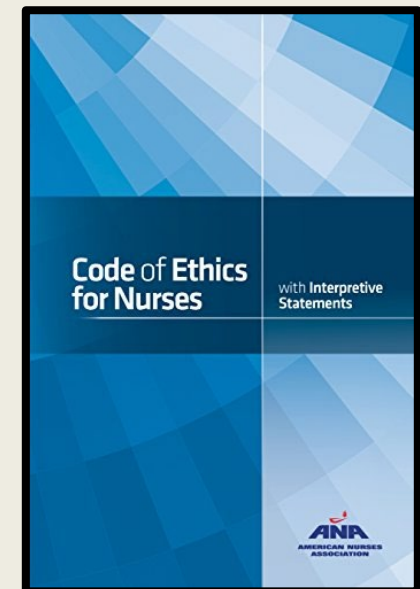


American Nurses Association (ANA)

2021 Scope and Standards of Practice (4th Ed)

- Standards 17 & 18

Code of Ethics (ANA, 2015)



Nurses Role in the Prevention, Mitigation & Treatment of the Effects of Climate Change.

Primary/Prevention.

- Health Education
- Promotion of Sustainable Practices
- Community Engagement
- Policy Advocacy

Secondary/Mitigation.

- Reducing Healthcare Emissions
- Advocating for Green Healthcare
- Transportation Initiatives

Tertiary/Treatment of Effects.

- Climate-Related Healthcare
- Healthcare Preparedness
- Mental Health Support
- Health Promotion



Climate Change & Environmental Health in the Curriculum

Overview.

- Equips future nurses with the knowledge and skills needed to provide high-quality, comprehensive care in a rapidly changing world.
- Positions nursing as a profession at the forefront of addressing critical global issues, contributing to improved health outcomes and a more sustainable future.

Deep-Dive.

- Public Health Impact
- Mental Health Impact
- Relevance to Nursing Practice
- Preparedness for Climate Related Health Emergencies
- Advocacy and Education
- Interdisciplinary Collaboration
- Sustainability in Healthcare
- Ethical and Social Responsibility

Challenges.

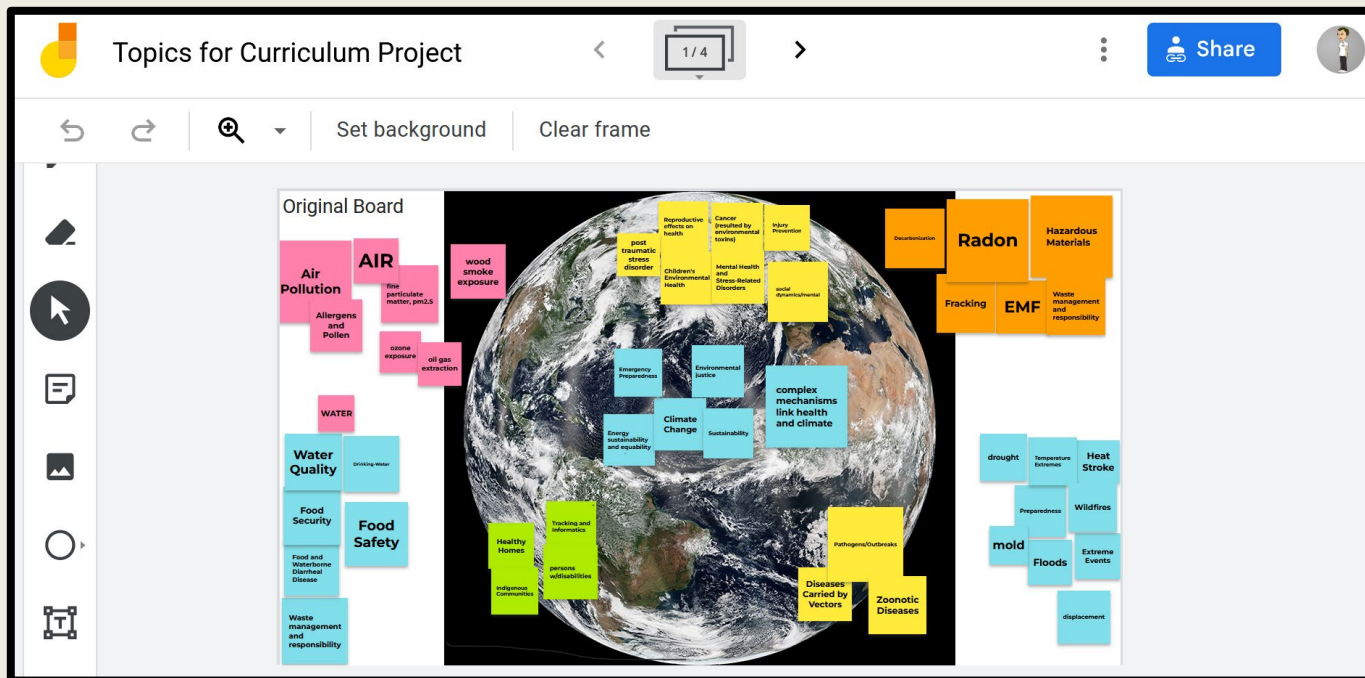
- Lack of publisher support
- Reinventing the wheel; champions at many schools and organizations

Jamboard: Pre-Study Initiative

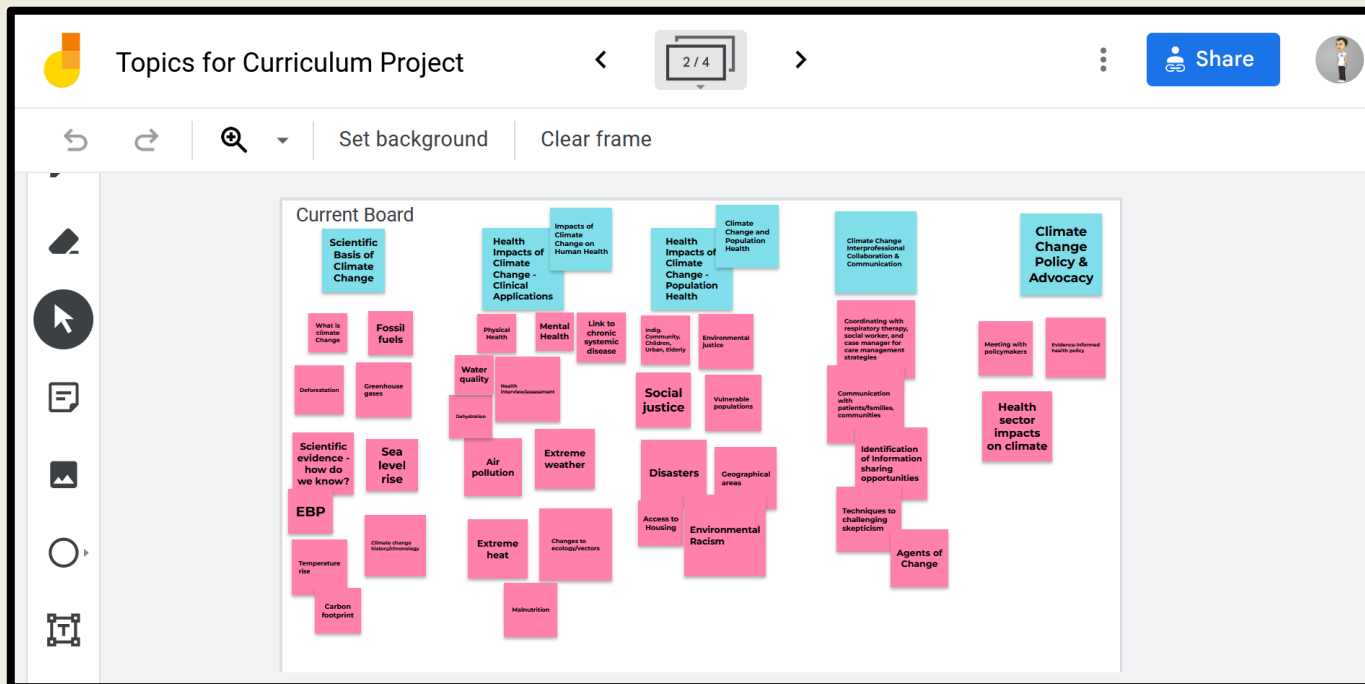
Jamboard™ is a product developed by Google.

It is an interactive whiteboard. It is used for online collaboration where users can draw, create shapes, lines and create digital sticky notes.





Brainstorming Phase.



Refined Phase.

Results - A Crosswalk Template.

- Domains
- Competencies
- Content Examples
- Suggested Learning Activities
- Suggested Assessments
- Simulation/Skills Lab Ideas

01_Curriculum Crosswalk_CURRENT .XLSX		
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1	Domains	Competencies
2	1. Scientific Basis of Climate Change	1-1. Identify the natural and human causes of climate change.
3		1-2. Describe the scientific evidence for climate change, including historical events and current trends.
4		1-3. Articulate the environmental effects of climate change across the globe.
5		1-4. Describe how the healthcare sector contributes to climate change, including energy and water use, greenhouse gas emissions, waste, and consumption practices.
6	2. Impacts of Climate Change on Human Health	2-1. Identify the health impacts of extreme heat, greenhouse gas emissions and other air pollutants, changes in ecology, and severe weather across the lifespan.
7		2-2. Describe the interrelated impacts of climate change on physical and mental health.
8		2-3. Demonstrate health assessment techniques that integrate the risks of climate change.
9		2-4. Perform nursing interventions aimed at reducing or preventing the impacts of climate change on health.
10	3. Climate Change, Social Justice, and Population Health	3-1. Recognize the disproportional effects of climate change on vulnerable populations, including particular health threats.
11		3-2. Model commitment to diversity, equity, and inclusion to dismantle systems of social and environmental injustice.
12		3-3. Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement.
13	4. Climate-Related Interprofessional Collaboration and Communication	4-1. Collaborate with interprofessional teams to lead evidence-based climate-smart initiatives in a variety of practice settings.
14		4-2. Identify opportunities for information sharing to create awareness and decrease skepticism surrounding climate change.
15		4-3. Utilize meaningful communication strategies to prevent and mitigate the impacts of climate change on patients, families, and communities.
16	5. Climate Action and Advocacy	5-1. Identify stakeholders to engage in climate policy making at local, state, national levels.
17		5-2. Implement strategies for climate-resilient healthcare infrastructure and sustainability in a variety of practice settings.
18		5-3. Leverage the trusted voice of nurses to influence public opinion and policy making in support of climate solutions.
19		5-4. Advocate for policies that promote social and environmental justice, reducing the disproportionate impacts of climate change on vulnerable populations.
20		

Study Overview.



PI: Jennifer J. Wasco

IRB: University of Pittsburgh, Study #22040116, Exempt

Overview: The goal of this proposal was to identify innovative, evidence-based educational strategies to promote the inclusion of environmental health and climate change topics into *existing* nursing curricula for all levels of nursing education programming.

Approach: The project used an online survey and leveraged an adapted “crowdfunding” method to identify suggestions on content, learning activities, assessment strategies, and simulation scenarios to associated concept domains and competencies relevant to environmental health and climate change.

Adapted “Crowdfunding” Approach?

Historically, crowdfunding is the practice of funding a practice by raising many small amounts of money from many people to achieve a common goal of launching a product.

In this study, it was *not* the focus to raise money but to garner many innovative ideas from many people (experts) across the nation via an online collaborative platform to create a resource for faculty to utilize in their practice.

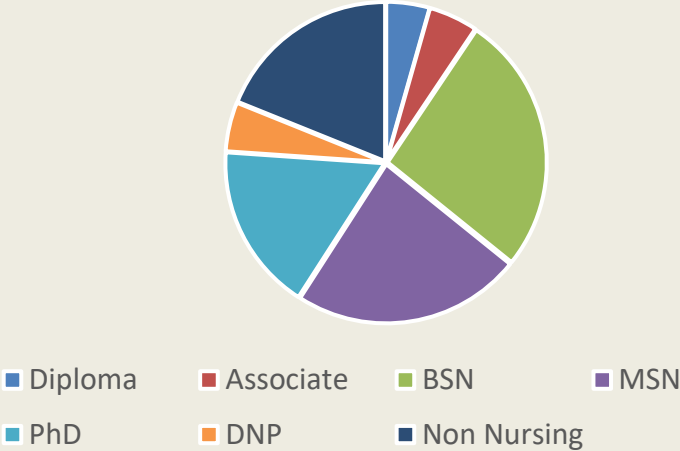


Overview of Respondent Demographics.

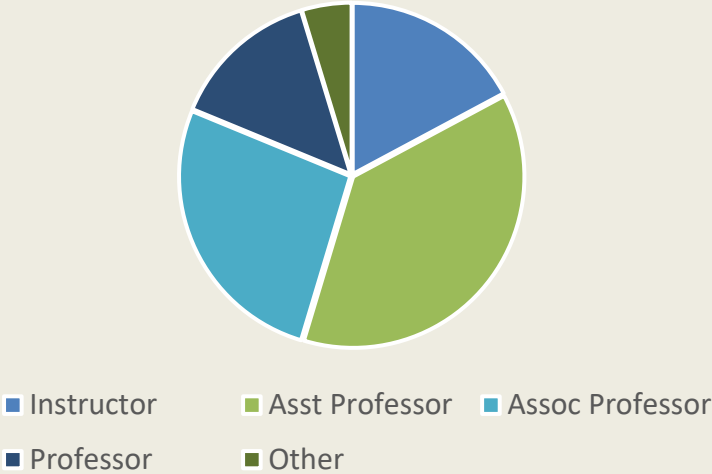
The demographics of this study show the wide variety of educators who participated.

The diversity of the population reflects the interest of the subject at all levels of nursing, in all aspects of education.

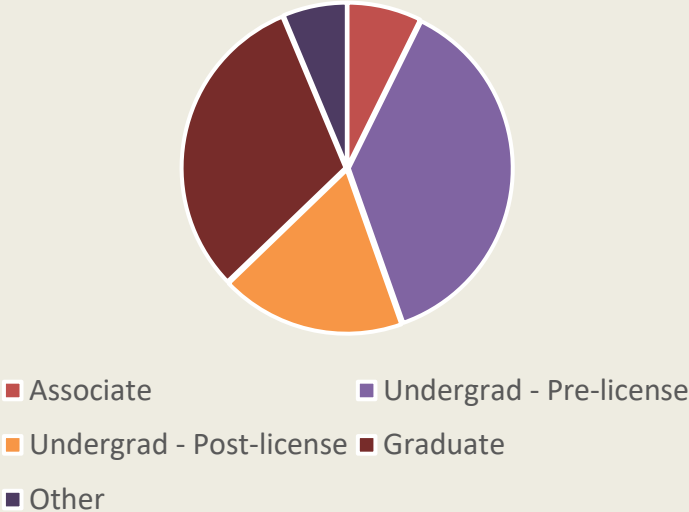
Nursing Education



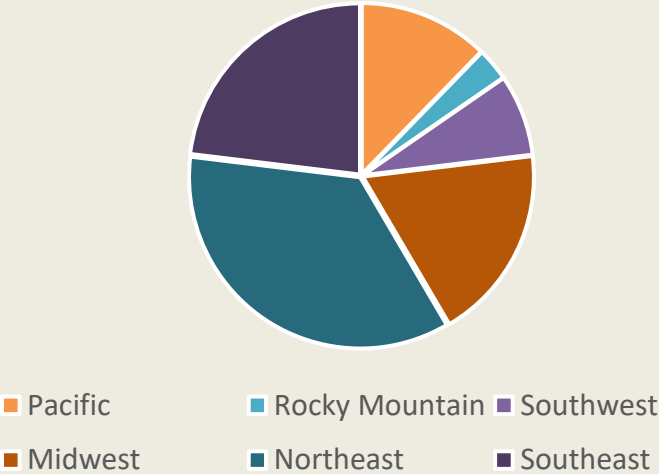
Faculty Role



Degree Program Employment



Geographic Location



Feedback Responses.

Domains	Competencies	Content Examples	Suggested Learning Activities	Suggested Assessments	Simulation/Skills Lab Ideas
1. Scientific Basis of Climate Change	1.1 Identify the natural and human causes of climate change.	The use of petroleum-based products, agricultural practices, disaster nursing in Puerto Rico and Florida, redemptive natural waterways, judicious use of supplies in a disaster zone.	Carbon footprint calculator, look at ANHE website and write a reflection on something they found interesting, why it's important and what nurses can do to address it, students identify potential roles of nursing in each phase of disaster care, read the book Green Health Care: How Hospitals Can Heal The Planet, Climate for Health Online Ambassador Training	Discussions, students develop green team plan, successful completion of training	
	1.2 Describe the scientific evidence for climate change, including historical events and current trends.	I had a natural gas... lecturer come to class	Climate for Health Online Ambassador Training	Quizzes that include discussion	
	1.3 Articulate the environmental effects of climate change across the globe.	CDC graphics, the sea level rise, concept of thermoregulation, heat stroke	Discuss 3 ways climate change affects health, describe a patient you cared for who was affected by climate change, discuss effects across the globe and your specific area of residence, Climate for Health Online Ambassador Training		
	1.4 Describe how the healthcare sector contributes to climate change, including energy and water use, greenhouse gas emissions, waste, and consumption practices.	ANHE textbook and materials, overwhelming use of disposables, clinical orientation, judicious use of supplies	Identify 3 changes that can be made in your workplace, read Greening Health Care: How Hospitals Can Heal the Planet, Read Janice E. Hawkins, Daniela Mousa, Kathleen Eviva, Reducing the Carbon Footprint of Our Health Care Systems While Lowering Costs	Green team papers in small groups	
2. Impacts of Climate Change on Human Health	2.1 Identify the health impacts of extreme heat, greenhouse gas emissions and other air pollutants, changes in ecology, and severe weather across the lifespan.	ANHE material, urban heat index, lack of green space, heat stroke, dehydration, renal failure, exacerbation of respiratory diseases	group work, Climate for Health Online Ambassador training		Heat stroke simulation (e-test)
	2.2 Describe the interrelated impacts of climate change on physical and mental health.	eco anxiety	Climate for Health Online Ambassador Training		clinical assessment, mental health simulation
	2.3 Demonstrate health assessment techniques that integrate the risks of climate change.			triage assessment	
	2.4 Perform nursing interventions aimed at reducing or preventing the impacts of climate change on health.	Students come up with individual interventions like reducing meat intake, nutrition effects	have students discuss how CC has impacted their client or potential - what further education would they provide, read Janice E. Hawkins, Daniela Mousa, Kathleen Eviva, Reducing the Carbon Footprint of Our Health Care Systems While Lowering Costs	Discharge planning - consider if client cannot get medication, food, medical followup due to climate or weather	
3. Climate Change, Social Justice, and Population Health	3.1 Recognize the disproportional effects of climate change on vulnerable populations, including particular health threats.	flooding in eastern Kentucky and southwest Virginia, oxygenation, perfusion	have students discuss how each of their clients are susceptible to CC, discuss which clients are more at risk		
	3.2 Model commitment to diversity, equity, and inclusion to dismantle systems of social and environmental injustice.	Have students listen to an NPR 8 minute podcast from NYC students on environmental justice, vulnerable populations to climate change	polling review, have students discuss potential and actual vulnerabilities of their clients - what vulnerable populations exist in the clinical area?		Have students identify vulnerable populations with "olives" clients may sign for, have without AC, live in urban area, etc)
	3.3 Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement.	Flooding in eastern Kentucky	Have students research disaster plans for their clinical area or their home area - where is it located? How hard is it to find? Is it understandable? Could students make it simpler? What is missing?	Have students research diseases which are most common in their area using federal or community data - which might be linked with CC?	
4. Climate-Related Interprofessional Collaboration and Communication	4.1 Collaborate with interprofessional teams to lead evidence-based climate-smart initiatives in a variety of practice settings.		Develop an IPE team at home and school and create an initiative, look at what interprofessional groups are involved in the disaster planning in their area and who else should be involved, read Janice E. Hawkins, Daniela Mousa, Kathleen Eviva, Reducing the Carbon Footprint of Our Health Care Systems While Lowering Costs		
	4.2 Identify opportunities for information sharing to create awareness and decrease skepticism surrounding climate change.		reported outcomes about CC - how do they differ? What lens is the documentary viewed? Have a documentary viewing party in class, Climate for Health students compare and contrast two communications regarding CC, personal carbon footprint calculator, decrease personal carbon footprint		
	4.3 Utilize meaningful communication strategies to prevent and mitigate the impacts of climate change on patients, families, and communities.		Attend town council meetings and town hall meetings and report on the content, health policy advocacy papers, green teams papers, have students review current legislation regarding issues to CC and have them write a letter of support or non-support letter to the editor, writing assignment to policy makers		
			Have students tour clinical settings and see what changes they'd recommend to minimize the facilities impact on food trails, read Janice E. Hawkins, Daniela Mousa, Kathleen Eviva, Reducing the Carbon Footprint of Our Health Care Systems While Lowering Costs		Tornado disaster drill
5. Climate Action and Advocacy	5.1 Identify stakeholders to engage in climate policy making at local, state, national levels.				
	5.2 Implement strategies for climate-resilient healthcare infrastructure and sustainability in a variety of practice settings.				
	5.3 Leverage the trusted voice of nurses to influence public opinion and policy making in support of climate solutions.		Identify nurses who support climate solutions, write a letter of support or non-support for a piece of legislation, research the "stand" of a nursing organization on CC and EHA letter to the editor writing assignment		
	5.4 Advocate for policies that promote social and environmental justice, reducing the disproportionate impacts of climate change on vulnerable		Students can write a position paper on CC, Students can research policies of their academic institution on CC and what measures they'd recommend for the institution to make, have students consider joining the NSNA and their EHA		

A. Domains

B. Competencies

C. Content Examples

D. Suggested Learning Activities

E. Suggested Assessments

F. Simulation/Skills Lab Ideas

“Carbon footprint calculator, look at ANHE website and write a reflection on something they found interesting, why it's important and what nurses can do to address it, students identify potential roles of nursing in each phase of disaster care, read the book Green Health Care: How Hospitals Can Heal The Planet, Climate for Health Online Ambassador Training”.

Limitations.

- Small sample size
- Detailed feedback needed to complete the form
- Limited time the study was opened for completion
- Participant not able to go back and complete later

Next Steps.

- Mapping of content to accreditation standards from various nursing program accreditation bodies.

Toolbox Takeaways.



Go-Bag Assignment.

Create document for a "Go Bag" for your household. Use the CDC website for suggestions. *Be specific!*

- What will you bring? How much will you bring?
- What do you have on hand? What will you need to purchase?
- How will you communicate with your household where the Go-Bag is located?
- How will you communicate with your members of your household in the event of an emergency?



Crosswalk Mapping:

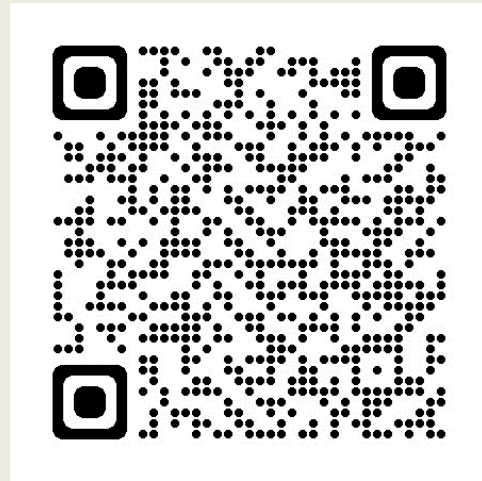
4-2. Identify opportunities for information sharing to create awareness and decrease skepticism surrounding climate change.

4-3. Utilize meaningful communication strategies to prevent and mitigate the impacts of climate change on patients, families, and communities.

Simulation.

Environmental Health in Nursing Simulation Scenarios

- Elder
- Child
- Outdoor Worker
- Pregnant



Crosswalk Mapping:

- 2.1 Identify the health impacts of extreme heat, greenhouse gas emissions and other air pollutants, changes in ecology, and severe weather
- 2-2. Describe the interrelated impacts of climate change on physical and mental health.
- 2-3. Demonstrate health assessment techniques that integrate the risks of climate change.
- 2-4. Perform nursing interventions aimed at reducing or preventing the impacts of climate change on health.
- 3-1. Recognize the disproportional effects of climate change on vulnerable populations, including health threats.

Virtual Escape Room Activity: Acute Care Setting.



Crosswalk Mapping:

- 2-1. Identify the health impacts of extreme heat, greenhouse gas emissions and other air pollutants, changes in ecology, and severe weather across the lifespan.
- 2-2. Describe the interrelated impacts of climate change on physical and mental health.
- 2-3. Demonstrate health assessment techniques that integrate the risks of climate change.
- 2-4. Perform nursing interventions aimed at reducing or preventing the impacts of climate change on health.
- 3-1. Recognize the disproportional effects of climate change on vulnerable populations, including health threats.

Virtual Escape Room Activity: Home Environment.



Identify opportunities for changes in the home environment:

- What is the issue?
- What are the consequences?
- What safer choices can be made?



Thinglink.com

Zombie Escape Room Activity.

Objectives:

Learners will be able to:

- Recognize symptoms of hazardous product exposure
- Provide supportive measures to maintain client condition
- Utilize MDS resource to find appropriate antidote
 - Calculate appropriate dose of antidote
 - Administer antidote properly



Pre-brief: You are working in an Emergency Room (ER). There is a report of a hazardous spill of an unknown substance at a nearby science lab after a climate-fueled disaster. It is anticipated several patients will be arriving at your facility. You will hear communication from the ambulance crew on-route to your facility.

Objective: Provide supportive measures to maintain client condition, discover the chemical of concern, and administer the antidote in a timely manner before the substance takes effect.

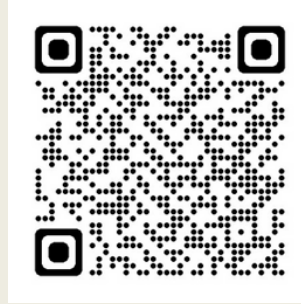
Crosswalk Mapping:

2-2. Describe the interrelated impacts of climate change on physical and mental health.

3-3. Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement

Windshield Survey.

- Alternative Clinical Assignment
- Considerations
 - Walking (pairs)
 - Driving (pairs)
 - Bus (group)
- "Home" neighborhood - may have more buy-in
- Clinical site neighborhood - may increase understanding of population in which they provide care



Crosswalk Mapping:

- 3-1. Recognize the disproportional effects of climate change on vulnerable populations, including health threats.
- 3-2. Model commitment to diversity, equity, and inclusion to dismantle systems of social and environmental injustice.
- 3-3. Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement.

IPREPARE Assessment Tool.

I-Investigate potential exposure

P-Present work

R-Residence

E-Environmental concerns

P-Past work

A-Activities

R-Referrals/resources

E-Educate

Crosswalk Mapping:

2-2. Describe the interrelated impacts of climate change on physical and mental health.

3-3. Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement.

Environmental Exposure History	
Do an exposure history to:	
<ul style="list-style-type: none">• Identify current or past exposures• Reduce or eliminate current exposures• Reduce adverse health effects	
I	Investigate Potential Exposures
P	Present Work
R	Residence
E	Environmental Concerns
P	Past Work
A	Activities
R	Referrals and Resources
E	Educate
Taking an Exposure History: Questions to Consider	
I	Investigate Potential Exposures
Investigate potential exposures by asking: ■ Have you ever felt sick after coming in contact with a chemical, pesticide, or other substance? ■ Do you have any symptoms that improve when you are away from your home or work?	
P	Present Work
At your present work: ■ Are you exposed to solvents, dusts, fumes, radiation, loud noise, pesticides, or other chemicals? ■ Do you know where to find Material Data Safety Sheets on chemicals that you work with? ■ Do you wear personal protective equipment? ■ Are work clothes worn home? ■ Do co-workers have similar health problems?	
R	Residence
■ When was your residence built? ■ What type of heating do you have? ■ Have you recently remodeled your home? ■ What chemicals are stored on your property? ■ Where does your drinking water come from?	
E	Environmental Concerns
■ Are there environmental concerns in your neighborhood (i.e., air, water, soil)? ■ What types of industries or farms are near your home? ■ Do you live near a hazardous waste site or landfill?	
P	Past Work
■ What are your past work experiences? ■ What is the longest job held? ■ Have you ever been in the military, worked on a farm, or done volunteer or seasonal work?	
A	Activities
■ What activities and hobbies do you and your family engage in? ■ Do you burn, solder, or melt any products? ■ Do you garden, fish or hunt? ■ Do you eat what you catch or grow? ■ Do you use pesticides? ■ Do you engage in any alternative healing or cultural practices?	
R	Referrals and Resources
Use these key referrals and resources:	
<ul style="list-style-type: none">■ Agency for Toxic Substances & Disease Registry (www.atsdr.cdc.gov)■ Association for Occupational and Environmental Clinics (www.aoc.org)■ Environmental Protection Agency (www.epa.gov)■ Material Safety Data Sheets (www.hazard.com/msds)■ Occupational Safety & Health Administration (www.osha.gov)■ Local Health Department, Environmental Agency, Poison Control Center	
E	Educate (A Checklist)
<ul style="list-style-type: none">■ Are materials available to educate the patient? ■ Are alternatives available to minimize the risk of exposure?■ Have prevention strategies been discussed? ■ What is the plan for follow-up?	
For more information contact ATSDR at 1-888-42-ATSDR (1-888-422-8737), or visit ATSDR's website at www.atsdr.cdc.gov	

Pre-Conference - Post-Conference.



- Has your client's health been affected by climate change? If so, how?
- What anticipatory guidance could you give this client related to extreme weather events (snow, power outages, heat, flooding)?
- Review the client's medications
- Is there education related to climate change you could provide - i.e., fluid intake, food intake, sun exposure?

Crosswalk Mapping:

2-2. Describe the interrelated impacts of climate change on physical and mental health.

2-3. Demonstrate health assessment techniques that integrate the risks of climate change.

3-1. Recognize the disproportional effects of climate change on vulnerable populations, including health threats.

3-2. Model commitment to diversity, equity, and inclusion to dismantle systems of social and environmental injustice.

3-3. Correlate the impacts of environmental hazards and disasters on population health, including home and community displacement.

Questions?



References.

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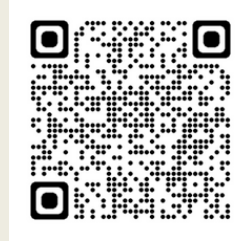
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Resources.



- Healthcare Without Harm – Nurses Climate Challenge
- Centers for Disease Control and Prevention – Natural Disasters and Severe Weather – [Build an Emergency Kit](#) (Go Bag)
- Ready.gov – Disasters and Emergencies – Make a Plan – [Build a Kit](#) (Basic Disaster Supplies Kit)
- U.S. Department of State – Crisis Management - [Packing a Go Bag and a Stay Bag](#)

Acknowledgements.

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