

Syllabus

Course Overview

In this course, you will begin to explore how people relate to their environment, and how to promote environmentally healthy and safe communities. Course topics include the effects of climate change on public health and how to identify hazardous agents in air, water, soil, food, and occupations, and prevent them from adversely affecting human health on a short- and long-term basis.

Course Competencies

(Read Only)

To successfully complete this course, you will be expected to:

- 1 Recommend strategies for dealing with the health effects of climate change in a community.
- 2 Assess the physical, social, and health risks of environmental exposures, using the principles of epidemiology.
- 3 Summarize how hazardous agents and other systemic exposure factors contribute to human diseases.
- 4 Apply public health theory or models to address environmental and manmade public health issues.
- 5 Analyze evidence-based environmental health interventions that promote adaptation and mitigate environmental hazards posing a risk to human health and safety.
- 6 Communicate public health information through a variety of media in a professional manner to meet the needs and contexts of diverse audiences.

Course Prerequisites

Prerequisite(s): PUBH4009 and PUBH4012.

Syllabus >> Course Materials

Required

The materials listed below are required to complete the learning activities in this course.

Integrated Materials

Many of your required books are available via the VitalSource Bookshelf link in the courseroom, located in your Course Tools. Registered learners in a Resource Kit program can access these materials using the courseroom link on the Friday before the course start date. Some materials are available only in hard-copy format or by using an access code. For these materials, you will receive an email with further instructions for access. Visit the [Course Materials](#) page on Campus for more information.

Book

Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning. ISBN: 9781284123975.

Library

The following required readings are provided in the Capella University Library or linked directly in this course. To find specific readings by journal or book title, use [Journal and Book Locator](#). Refer to the [Journal and Book Locator library guide](#) to learn how to use this tool.

- Bell, M. L. (2017). [Advancing science and public health practice on climate change and health justice](#). *American Journal of Public Health, 107*(11), 1687.
- Brisman, A., & South, N. (2015). [New "folk devils," denials and climate change: Applying the work of Stanley Cohen to green criminology and environmental harm](#). *Critical Criminology, 23*(4), 449–460.
- Cambridge Educational (Producer). (2006). [Climate change: Global warming and greenhouse effect](#) [Video]. Films on Demand.
- Cambridge Educational (Producer). (2006). [Environmental issues and human impact](#) [Video]. Films on Demand.
- Cann, K. F., Thomas, D. R., Salmon, R. L., Wyn-Jones, A. P., & Kay, D. (2013). [Extreme water-related weather events and waterborne disease](#). *Epidemiology and Infection, 141*(4), 671–686.
- D'Amato, G., Vitale, C., Rosario, N., Jose, H., Neto, C., Chong-Silva, D. C., ... D'Amato, M. (2017). [Climate change, allergy and asthma, and the role of tropical forests](#). *World Allergy Organization Journal, 10*(11).
- Dreelin, E. A., Ives, R. L., Molloy, S., & Rose, J. B. (2014). [Cryptosporidium and Giardia in surface water: A case study from Michigan, USA to inform management of rural water systems](#). *International Journal of Environmental Research and Public Health, 11*(10), 10480–10503.
- Erwin, P. C., & Brownson, R. C. (2017). [The public health practitioner of the future](#). *American Journal of Public Health, 107*(8), 1227–1232.
- Gilner, R. (Producer). (2004). [Education for what? Learning social responsibility](#) [Video]. Films on Demand.
- Gould, S., & Rudolph, L. (2015). [Challenges and opportunities for advancing work on climate change and public health](#). *International Journal of Environmental Research and Public Health, 12*(12), 15649–15672.
- Jørgensen, S. L., & Termansen, M. (2016). [Linking climate change perceptions to adaptation and mitigation action](#). *Climatic Change, 138*(1–2), 283–296.
- Macdonald, W., & Oakman, J. (2015). [Requirements for more effective prevention of work-related musculoskeletal disorders](#). *BMC Musculoskeletal Disorders, 16*, 1–9.
- Maher, K. (2018, May 8). [Maryland to other states: Stop sending us your dirty air](#). *The Wall Street Journal*.
- Nicholas, P. K., & Breakey, S. (2017). [Climate change, climate justice, and environmental health: Implications for the nursing profession](#). *Journal of Nursing Scholarship, 49*(6), 606–616.
- Petkova, E. P., Ebi, K. L., Culp, D., & Redlener, I. (2015). [Climate change and health on the U.S. Gulf Coast: Public health adaptation is needed to address future risks](#). *International Journal of Environmental Research and Public Health, 12*(8), 9342–9356.
- Rebmann, T., & Carrico, R. (2017). [Consistent infection prevention: Vital during routine and emerging infectious diseases care](#). *Online Journal of Issues in Nursing, 22*(1), 1–14.
- Schulte, P. A., Whittaker, C., & Curran, C. P. (2015). [Considerations for using genetic and epigenetic information in occupational health risk assessment and standard setting](#). *Journal of Occupational & Environmental Hygiene, 12*, S69–S81.
- Sun, L. H. (2018, May 1). [Diseases spread by ticks, mosquitoes and fleas more than tripled in the U.S. since 2004](#). *The Washington Post*.
- Valles, S. A. (2015). [Bioethics and the framing of climate change's health risks](#). *Bioethics, 29*(5), 334–341.

- Watts, N., Adger, W. N., Ayeb-Karlsson, S., Bai, Y., Byass, P., Campbell-Lendrum, D., ... Costello, A. (2017). [The Lancet Countdown: Tracking progress on health and climate change](#). *The Lancet*, 389(10074), 1151–1164.
- Weems, C., & Subramaniam, P. R. (2017). [Reframing climate change for environmental health](#). *Journal of Environmental Health*, 79(8), 24–27.

External Resource

Please note that URLs change frequently. While the URLs were current when this course was designed, some may no longer be valid. If you cannot access a specific link, contact your instructor for an alternative URL. Permissions for the following links have been either granted or deemed appropriate for educational use at the time of course publication.

- [100 Resilient Cities](http://100resilientcities.org). (n.d.). Retrieved from <http://100resilientcities.org>
- AirNow. (n.d.). [AirCompare home](https://www3.epa.gov/aircompare/#home). Retrieved from <https://www3.epa.gov/aircompare/#home>
- AirNow. (n.d.). Retrieved from <https://www.airnow.gov>
- American Public Health Association (APHA). (n.d.). [Empowering environmental health professionals](https://www.apha.org/topics-and-issues/environmental-health/empowering-environmental-health-professionals). Retrieved from <https://www.apha.org/topics-and-issues/environmental-health/empowering-environmental-health-professionals>
- Centers for Disease Control and Prevention (CDC), The National Institute for Occupational Safety and Health (NIOSH). (n.d.). [Impact of climate on workers](https://www.cdc.gov/niosh/topics/climate/how.html). Retrieved from <https://www.cdc.gov/niosh/topics/climate/how.html>
- Centers for Disease Control and Prevention (CDC). (n.d.). [CDC's building resilience against climate effects \(BRACE\) framework](https://www.cdc.gov/climateandhealth/BRACE.htm). Retrieved from <https://www.cdc.gov/climateandhealth/BRACE.htm>
- Centers for Disease Control and Prevention (CDC). (n.d.). [Climate and health](https://www.cdc.gov/climateandhealth/default.htm). Retrieved from <https://www.cdc.gov/climateandhealth/default.htm>
- Centers for Disease Control and Prevention (CDC). (n.d.). [Climate-ready states & cities initiative grantees](https://www.cdc.gov/climateandhealth/crsci_grantees.htm). Retrieved from https://www.cdc.gov/climateandhealth/crsci_grantees.htm
- Centers for Disease Control and Prevention (CDC). (n.d.). [Food safety](https://www.cdc.gov/foodsafety/index.html). Retrieved from <https://www.cdc.gov/foodsafety/index.html>
- Centers for Disease Control and Prevention (CDC). (n.d.). [Health, United States – Infographics](https://www.cdc.gov/nchs/hus/hus_infographic.htm). Retrieved from https://www.cdc.gov/nchs/hus/hus_infographic.htm
- Centers for Disease Control and Prevention (CDC). (n.d.). [One Health basics](https://www.cdc.gov/onehealth/basics/index.html). Retrieved from <https://www.cdc.gov/onehealth/basics/index.html>
- Centers for Disease Control and Prevention (CDC). (n.d.). [Tickborne diseases of the United States](https://www.cdc.gov/ticks/diseases/index.html). Retrieved from <https://www.cdc.gov/ticks/diseases/index.html>
- Coleman, R. (2017, August 16). [Update: 'Erin Brockovich' carcinogen in 250 million Americans' drinking water](https://www.ewg.org/enviroblog/2017/08/update-erin-brockovich-carcinogen-250-million-americans-drinking-water#WvRXZGaZOuo). Retrieved from <https://www.ewg.org/enviroblog/2017/08/update-erin-brockovich-carcinogen-250-million-americans-drinking-water#WvRXZGaZOuo>
- County of Los Angeles Public Health. (n.d.). [Acute communicable disease control: Vector-borne & zoonotic diseases](http://publichealth.lacounty.gov/acd/Vector.htm). Retrieved from <http://publichealth.lacounty.gov/acd/Vector.htm>
- Environmental Working Group (EWG). (n.d.). [EWG's tap water database](https://www.ewg.org/tapwater/#WvX1X_kvuuU). Retrieved from https://www.ewg.org/tapwater/#WvX1X_kvuuU
- Feldscher, K. (2016, August 9). [Unsafe levels of toxic chemicals found in drinking water of 33 states](https://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states). *The Harvard Gazette: Health & Medicine*. Retrieved from <https://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states>
- Mayo Clinic. (n.d.). [Infectious diseases](https://www.mayoclinic.org/diseases-conditions/infectious-diseases/symptoms-causes/syc-20351173). Retrieved from <https://www.mayoclinic.org/diseases-conditions/infectious-diseases/symptoms-causes/syc-20351173>
- Miami-Dade County, Office of Sustainability. (n.d.). [Community resource guide on climate resilience \[PDF\]](http://earthethicsinstitute.org/Resources/MiamiDadeCountyCommunityResourceGuide_ClimateResilience.pdf). Retrieved from http://earthethicsinstitute.org/Resources/MiamiDadeCountyCommunityResourceGuide_ClimateResilience.pdf
- Minnesota Department of Health. (n.d.). [Climate and health](http://www.health.state.mn.us/climatechange). Retrieved from <http://www.health.state.mn.us/climatechange>
- National Environmental Health Association (NEHA). (n.d.). [Definitions of environmental health](https://www.neha.org/about-neha/definitions-environmental-health). Retrieved from <https://www.neha.org/about-neha/definitions-environmental-health>
- National Institute of Environmental Health Sciences (NIEHS). (n.d.). [Climate and human health](https://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/asthma/index.cfm). Retrieved from https://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/asthma/index.cfm
- Office of Disease Prevention and Health Promotion (ODPHP). (n.d.). [Food safety](https://www.healthypeople.gov/2020/topics-objectives/topic/food-safety?topicid=14). Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/food-safety?topicid=14>
- One Health Initiative. (n.d.). [Mission statement](http://www.onehealthinitiative.com/mission.php). Retrieved from <http://www.onehealthinitiative.com/mission.php>
- Ramey, E. (2018). [Former state environmental health official thought Flint water crisis might 'embarrass' governor](http://www.abc12.com/content/news/Former-state-environmental-health-official-thought-Flint-water-crisis-might-embarrass-governor-484106701.html). Retrieved from <http://www.abc12.com/content/news/Former-state-environmental-health-official-thought-Flint-water-crisis-might-embarrass-governor-484106701.html>
- United States Department of Labor, Occupational Safety and Health Administration (OSHA). (n.d.). Retrieved from <https://www.osha.gov>
- United States Environmental Protection Agency (EPA). (n.d.). [Conducting a human health risk assessment](https://www.epa.gov/risk/conducting-human-health-risk-assessment). Retrieved from <https://www.epa.gov/risk/conducting-human-health-risk-assessment>
- United States Environmental Protection Agency (EPA). (n.d.). [Ground water and drinking water](https://www.epa.gov/ground-water-and-drinking-water). Retrieved from <https://www.epa.gov/ground-water-and-drinking-water>
- World Health Organization (WHO). (2017, October 31). [Vector-borne diseases](http://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases). Retrieved from <http://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>
- World Health Organization (WHO). (2018, February 1). [Climate change and health](http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health). Retrieved from <http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health>

Suggested

The following materials are recommended to provide you with a better understanding of the topics in this course. These materials are not required to complete the course, but they are aligned to course activities and assessments and are highly recommended for your use.

Optional

The following optional materials are offered to provide you with a better understanding of the topics in this course. These materials are not required to complete the course.

Projects

Project >> Building Resistance Against Climate Effects

Project Overview

Start With the End in Mind

One of the best practices for approaching a Capella course is to start by examining the final project first—before you read anything else. You will improve your study strategies and your ability to use your time more strategically. After you read this project overview, go directly to Unit 9 and read the assignment instructions and scoring guide.

Once you know where you are headed, it is easier to get there.

Project Scenario

The final project is based on a scenario in which you will assume that you are working with a hypothetical group of local stakeholders. As a team member, you have been asked to create a community resource guide (CRG) to help the community adapt to, and possibly mitigate (reduce), the effects of climate change on a local public health issue.

Selecting a Public Health Issue

You will choose a community and consult public health websites to identify and select an evidence-based public health issue related to climate change in that community. You are expected to support your work with evidence you glean from your required readings, the website resources provided in your unit studies, and your own additional research.

Community Resource Guide

The final assignment in Unit 9 is a comprehensive resource guide to help the community decide on action steps it can take in the long and short term, based on the following:

- An environmental risk assessment (which you will complete).
- Public health theories or models.
- The CDC's BRACE (building resistance against climate effects) framework.

To accompany the resource guide, you will create an infographic that could be presented to a local community stakeholders' meeting, highlighting the key elements that can be found in the guide.

Project Components

Activity	Grade Weight (%)
u03a1 - A Call to Action	10
u05a1 - Environmental Risk Assessment	20
u07a1 - Applying Public Health Theories and Models in Prevention Strategies	20
u09a1 - Building Resistance Against Climate Effects	30

Unit 1 >> The World of Environmental Health

Introduction

In this unit, you will explore an overview of environmental health, and begin to identify the potential risks and hazards that might be present in your own community.

What Is Environmental Health?

According to the National Environmental Health Association (n.d.), environmental health is the branch of public health that focuses on the interrelationships between people and their environment. Environmental health is also the science and practice of how to prevent human injury and illness by identifying and evaluating hazardous agents and other environmental sources.

Why Is It Important?

Environmental health science positively affects human health by demonstrating and communicating how to identify and limit exposure to hazardous agents in the air, water, food, and other basic elements necessary for human life. In a comprehensive public health system, environmental health also advances evidence-based programs and policies that can provide communities with healthier environments.

Environmental Health Starts at Home

Environmental health is profoundly local and starts with each of us. Throughout this course, you will have the opportunity to make real personal contributions to improve and sustain a healthy environment.

Reference

National Environmental Health Association (NEHA). (n.d.). Definitions of environmental health. Retrieved from <https://www.neha.org/about-neha/definitions-environmental-health>

Learning Activities

u01s1 - Studies

Required

In addition to your required textbook and library readings, you will be presented with Internet websites throughout the studies in this course, which you are required to use to gather information and build understanding. Do this critically! Examining a website means carefully reading the homepage, and then touring the site and finding pages that relate to the relevant public health issues you are studying. When visiting websites, scan the major topics related the issues you are studying to get an overview. Go to each link from the homepage and read the first page on that topic, digging deeper if you find a specific link that interests you. Take notes and bookmark pages when you find good information.

Introduction to Environmental Health

Read the following resources, which provide an introduction to environmental health, including the broad range of areas covered under this topic.

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 1, "Introduction: The Environment at Risk," pages 2–27.
 - Chapter 3, "Environmental Toxicology," pages 51–68.
- National Environmental Health Association (NEHA). (n.d.). [Definitions of environmental health](https://www.neha.org/about-neha/definitions-environmental-health). Retrieved from <https://www.neha.org/about-neha/definitions-environmental-health>
- American Public Health Association (APHA). (n.d.). [Empowering environmental health professionals](https://www.apha.org/topics-and-issues/environmental-health/empowering-environmental-health-professionals). Retrieved from <https://www.apha.org/topics-and-issues/environmental-health/empowering-environmental-health-professionals>

Think Globally, Act Locally Discussion Preparation

Complete the following reading, which is required for the second discussion in this unit:

- Miami-Dade County, Office of Sustainability. (n.d.). [Community resource guide on climate resilience \[PDF\]](http://earthethicsinstitute.org/Resources/MiamiDadeCountyCommunityResourceGuide_ClimateResilience.pdf). Retrieved from http://earthethicsinstitute.org/Resources/MiamiDadeCountyCommunityResourceGuide_ClimateResilience.pdf

Environmental Health Resource Repository

- View the [Environmental Health Resource Repository](#), which contains multiple environmental and public health resources that may be useful throughout the course. You are advised to become familiar with the wide variety of sources available to you through this repository. You may find some sites particularly valuable in your career beyond your time as a Capella learner. You are encouraged to bookmark these sites for future reference.

Films on Demand Video

- Cambridge Educational (Producer). (2006). *Environmental issues and human impact* [Video]. Films on Demand.
 - In this video, you will learn about some urgent environmental concerns emerging for the planet and what individuals can do to help mitigate the damage. Antipollution initiatives like recycling and greater energy efficiency are addressed.
 - Running time: 21:41.

Study Resources

Explore the following Campus resource:

- [Public Health Undergraduate Library Research Guide](#). You have used this research guide throughout your program. You are encouraged to revisit it as a useful resource throughout this course as well. It contains links to publications, strategies, tips, and tutorials for research specific to public health.

u01d1 - Getting to Know Your Community and the Environment

Preparation

For your discussions throughout this course, you will be expected to refer to your studies, cite sources, and take some time to consider how the issues being discussed could be impacting you, your family, and your community. Be sure to familiarize yourself with the Discussion Participation Scoring Guide to learn how your discussions will be evaluated.

Initial Discussion Post

Suppose you are a member of a community organization concerned about the impact of the environment on local public health issues. You decide to begin independently investigating the interrelationships between people in your community and their environment.

Refer to the resources and required readings in this unit to address the following:

- List five leading public health issues in your community and explain their connection to the environment.
 - Cite your evidence and sources using correct APA style and format.
- Describe the populations most impacted by these issues and give a brief explanation of how they are affected.
- Identify two sources where you can find personal stories of people in your community connected to the five issues you have identified.
- Make it personal: in what way do (or could) these issues impact your own life? What is your response to that impact?

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Course Resources

[Undergraduate Discussion Participation Scoring Guide](#)

[Community Resource Guide on Climate Resilience \[PDF\]](#)

APA Style and Format

u01d1 - Learning Components

- Use data from government public health websites.
- Find a personal example that tells the story of the impact of a public health issue.
- Describe the characteristics of a population group impacted by a public health issue.
- Practice academic writing skills in discussion activities.

u01d2 - Environmental Health Starts at Home

Overview

Creating a healthier community starts with you.

As a practicing public health professional, or someone interested in becoming a public health professional, you will be asking others to make a change in their behaviors related to the world around them. It will take commitment and determination to build up the energy to follow through and take the steps that will make a difference for themselves and for others. You are sending each and every person you ask to help improve the environmental health of the community on a personal journey.

It Is Time to Walk Your Talk

Your task, during these next 10 weeks, will be to pay close attention to what it takes to make and keep a commitment to take action in support of environmental health in your own home or community.

This is going to be a real-life *think globally, act locally* series of activities designed and carried out by you, for your own environment and community. Your ongoing task will be to take one small action every week that is designed to improve or support the health of your environment in some demonstrable way. You will be posting your actions and observations each week in the second unit discussion activity (except in units where there is an assignment).

Initial Discussion Post

Starting in your own home or workplace, take a look around at your personal environment. Based on what you know right now about environmental health, make a list of what you might address to improve your personal environment. Choose one small step from your list to take this week in improving your personal environment.

In your initial post, address the following:

- List the public health issues in your personal environment that warrant further investigation.
 - Describe some of the thoughts that came to mind as you started to look more closely at your personal spaces.
 - Does your thinking raise any ethical questions, and what are they?
- What one small step could an individual make to improve the environmental health of their home or workplace?
- What small action or step did you take this week?
- How could you extend that step out to your community?

Response Guidelines

No responses are required for this discussion, but you are encouraged to read about your peers' experiences and respond when moved to do so.

Course Resources

Undergraduate Discussion Participation Scoring Guide

u01d2 - Learning Components

- Take action in small ways in the home or community to mitigate or adapt to environmental health risks.
- Share observations about the health of the living and working environment.

Unit 2 >> Impact of Climate on Health

Introduction

In this unit, you will explore some of the effects of climate change, including:

- More variable weather conditions, precipitating heat waves, flooding, and droughts.
- More intense storms, such as tornadoes and hurricanes, rising sea levels, and more air pollution.

Each of these changes has the potential to negatively affect health. This week, you will begin the process of choosing one public health issue related to climate change in your community that you will explore in more depth throughout the course.

Climate and Health

According to the Centers for Disease Control and Prevention (CDC), scientific understanding of the effects of climate change is continually emerging. Experts say there is a pressing need to prepare for potential health risks (n.d.). Climate change impacts public health in many ways. While some of these will always remain unexplainable, others, as you will see in your readings, are supported by considerable evidence.

Since 2006, the de facto national public health thought and resource leader, the CDC, as well as many state and local public health departments, have recognized the need to prepare for the impact climate change will likely have on health, both in the U.S. and worldwide. The CDC climate and public health framework was created in 2006 to address this issue. In 2009, the CDC formally established the Climate and Health Program (2016).

Concerns About the Language of Climate Change

There is a fear that new leaders at the CDC (and the EPA and other government agencies) will actually repeal the actions taken since 2006 and strip language like "climate change" from their materials, in spite of the widespread scientific consensus that the world's climate is changing (Hersher, 2017).

References

Centers for Disease Control and Prevention (CDC). (n.d.). Climate and health. Retrieved from <https://www.cdc.gov/climateandhealth/default.htm>

Hersher, R. (2017, November 29). Climate scientists watch their words, hoping to stave off funding cuts. Retrieved from <https://www.npr.org/sections/thetwo-way/2017/11/29/564043596/climate-scientists-watch-their-words-hoping-to-stave-off-funding-cuts>

Learning Activities

u02s1 - Studies

Required

In this study, you will be adding the dimension of climate change to public health issues. Take some notes and add bookmarks from the websites and readings you are assigned. You might be using these later. Pay particular attention when you see the BRACE framework, environmental risk assessments, theories and models related to climate change, adaptation and mitigation, or climate change success stories. You will be using this information for your discussions and your final assignment.

Scope and Depth of Climate Change Effects on Public Health

Read the following materials on climate change and health:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - The section titled "Global Climate Change and Global Warming," pages 263–266 of Chapter 10, "Air Quality."
- Centers for Disease Control and Prevention (CDC). (n.d.). [Climate and health](https://www.cdc.gov/climateandhealth/default.htm). Retrieved from <https://www.cdc.gov/climateandhealth/default.htm>
- World Health Organization (WHO). (2018, February 1). [Climate change and health](http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health). Retrieved from <http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health>

BRACE Framework

Read the following introduction to the BRACE framework:

- Centers for Disease Control and Prevention (CDC). (n.d.). [CDC's building resilience against climate effects \(BRACE\) framework](https://www.cdc.gov/climateandhealth/BRACE.htm). Retrieved from <https://www.cdc.gov/climateandhealth/BRACE.htm>

Complete the following multimedia presentation:

- View the [BRACE Model](#). This is a representation of the BRACE framework. This model is a key organizing principle around which your final assignment will be built.

Different Perspectives on Climate Change and Public Health

Read the following articles about perspectives on climate change and public health:

- Bell, M. L. (2017). [Advancing science and public health practice on climate change and health justice](#). *American Journal of Public Health*, 107(11), 1687.
- Gould, S., & Rudolph, L. (2015). [Challenges and opportunities for advancing work on climate change and public health](#). *International Journal of Environmental Research and Public Health*, 12(12), 15649–15672.
- Weems, C., & Subramaniam, P. R. (2017). [Reframing climate change for environmental health](#). *Journal of Environmental Health*, 79(8), 24–27.

Not Everyone Agrees Climate Change Is Important

Read the following article on climate change denial:

- Brisman, A., & South, N. (2015). [New "folk devils," denials and climate change: Applying the work of Stanley Cohen to green criminology and environmental harm](#). *Critical Criminology*, 23(4), 449–460.

Films on Demand Video

- Cambridge Educational (Producer). (2006). [Climate change: Global warming and greenhouse effect \[Video\]](#). Films on Demand.
 - The average temperature of the Earth is increasing, causing a change in the climate, including long-term weather patterns. In this video, you will see how human activity can increase greenhouse gases in the atmosphere.
 - Running time: 5:36.

Suggested

You are encouraged to use the Environmental Health Resource Repository to expand your understanding of the topics in this course.

- [Environmental Health Resource Repository](#).

u02d1 - Investigating Climate Change and Public Health

Preparation

Imagine that you wake up one morning to see the following headline on your news feed: "CDC Finds State a Tick Disease Hotbed" (Olson, 2018). Reading further, you see that federal officials think the tripling of insect-borne diseases could be linked to climate change. While there is some debate on the causes of climate change, there is almost scientific unanimity that the climate is changing worldwide—and in many cases for the worse.

For your first course project assignment next week, you will choose a public health issue affected by climate change in your community. As you prepare for this assignment, consider the evidence provided in the readings for this unit about climate change and public health to help you make your choice. In your first discussion last week, you listed five public health issues in your community. For this discussion post, you will narrow that list to two potential issues that you might investigate for your course project and add the dimension of climate change.

Initial Discussion Post

Choose two of the five environmental public health issues in your community that you listed in your Unit 1 discussion and consider how they are impacted by climate change. Investigate your two chosen issues, using the two websites (from the CDC and the WHO), linked in the Resources. Carefully read the homepages for these websites, then tour the sites to find pages that relate to the impact of climate change on the public health issues you have chosen.

In your initial post, address the following for your two chosen issues:

- What evidence was used to link each of the two public health issues to climate change?
- Did you see gaps in the information or unanswered questions on the websites?
- What additional information would strengthen the case for relating each public health issue to climate change?
- What are the main assumptions that lie beneath both websites?
- Make it personal: in what way do (or could) these issues impact your own life? What is your response to that impact?

It might be helpful to copy and paste each of the questions above into your discussion post, so you will not miss any as you complete this discussion.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Reference

Olson, J. (2018, May 2), CDC find state a tick disease hotbed. *Minneapolis Star Tribune*, p.1.

Course Resources

Undergraduate Discussion Participation Scoring Guide

[Climate and Health](#)

[Climate Change and Health](#)

[APA Style and Format](#)

u02d1 - Learning Components

- Use data from government public health websites.
- Describe the risk of exposure to hazardous agents in a community.
- Compare and contrast evidence-based interventions used in communities with similar environmental health issues.
- Practice academic writing skills in discussion activities.

u02d2 - Think Globally, Act Locally on Climate

Adaptation and Mitigation

There is a very simple explanation of how these two terms are used with regard to public health issues:

- Adaptation refers to how you are dealing with any public health risk on a day-to-day basis.
- Mitigation reflects a public health *prime directive*, which asks, what is the source of the risk, and how can it be eliminated?

Initial Discussion Post

Creating a healthier community starts with you. In your own neighborhood, take a look around and make a list of the effects of climate change on public health. Choose one small step based on your list to take this week in improving your personal environment.

In your initial post, address the following:

- List the public health issues in your personal environment that warrant further investigation, specifically in relation to climate change.
 - Describe some of the thoughts that came to mind as you started to look more closely at the impacts of climate change in your personal environment.
- Identify one step an individual could take to improve the environmental health of his or her home or workplace.
 - Would you describe this step as an adaptation or a mitigation? Explain.
- What small action or step did you take this week?
- How could you extend that step out to your community?

Response Guidelines

No responses are required for this discussion, but you are encouraged to read about your peers' experiences and respond when moved to do so.

Course Resources

Unit 3 >> Epidemiology in Action

Introduction

The Scientific Method

Everyone in this course has already taken the Introduction to Epidemiology and Introduction to Biostatistics courses. This is important, because the principles of epidemiology in public health are best described as scientific, systematic, and data-driven.

Using scientific methods helps us to better understand both the distribution and the causes and risk factors of all health-related events. And, most importantly, epidemiology helps public health to apply what is learned from the data and other sources to help create the surveillance, adaptation, and mitigation strategies and programs that help control health problems.

In this unit, you will see concrete examples of how epidemiology works in practice. For your first project assignment, A Call to Action, you will take an unbiased approach to the collection, analysis, and interpretation of public health data in relation to a climate change-related issue in your community.

Learning Activities

u03s1 - Assignment Preparation

The assignment in this unit requires you to choose one public health issue related to climate change. You will need to support your choice with evidence that the issue is important and that it affects a population or populations in your community.

- View [American Family: Toxic Chemicals in the Neighborhood](#) to see an example of how to select an evidence-based environmental health issue related to climate change that has both data and scientific evidence to warrant the creation of a public health intervention.

Refer to the resource repository to help you identify both the issue and the evidence to support your issue.

- [Environmental Health Resource Repository](#).

u03s1 - Learning Components

- Examine evidence-based strategies designed to address environmental health issues.

u03s2 - Studies

Required

In addition to the preparation studies specified for your assignment, you are required to complete the following readings.

Environmental Epidemiology

Read the following materials on environmental epidemiology:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 2, "Environmental Epidemiology," pages 28–50.
- Cann, K. F., Thomas, D. R., Salmon, R. L., Wyn-Jones, A. P., & Kay, D. (2013). [Extreme water-related weather events and waterborne disease](#). *Epidemiology and Infection*, 141(4), 671–686.

Adaptation in Action

Read the following article on the adaptation of public health to climate change:

- Petkova, E. P., Ebi, K. L., Culp, D., & Redlener, I. (2015). Climate change and health on the U.S. Gulf Coast: Public health adaptation is needed to address future risks. *International Journal of Environmental Research and Public Health*, 12(8), 9342–9356.

Suggested

You are encouraged to refer to the following Campus resource:

- [Public Health Undergraduate Library Research Guide](#).

u03a1 - A Call to Action

Overview

This is the first of the four assignments in your course project. Each of the assignments builds toward the final project assignment in Unit 9, which is to create a community resource guide for a community of your choice. You will begin by selecting your community and public health issue in this assignment. If you have not already done so, read the project description and each of the assignments and their scoring guides now, for an overview of what will be required.

For this assignment, you will write a 2–3 page memo about one environmental health issue in a specific community, addressed to a group of local stakeholders (such as a neighborhood- or community-board group). Your task will be to put a *human face* on the issue by including a story of how the issue impacts the life of someone representative of a local (or larger) community.

Instructions

Identify and select an evidence-based environmental public health issue related to climate change in a specific community, based on your own research of government public health websites. Write your memo about your chosen issue to the audience of a fictitious neighborhood- or community-board group. You are expected to support your work with evidence you glean from your required readings, the website resources provided in your unit studies, and your own additional research of outside sources.

Your memo should be addressed to a specific person or group, and it should look like a memo. Memos are essentially structured like an e-mail. They contain the following elements prior to the body of the memo:

- To:
- From:
- Subject:

You may use a personal story from your own life as an opener, or find an example of a story from a news source. Describe the environment hazards present in the environment, and present the associated evidence-based risks for the community. Conclude your memo by making a *call to action* urging that the community create a short-term plan for adapting to increasing environmental risks involved with your chosen issue, and develop a longer-term mitigation plan for it.

Your memo must contain the following points, which correspond to the grading criteria for this assignment:

- Describe the environmental hazards present in the community, using data from government public health resources.
- Tell the story of an individual impacted by the environmental health issue.
- Describe the populations that are most impacted by the environmental health issue in the specific community.
- Describe the exposure factors related to the public health issue.
- Use evidence to support your recommendations to adopt strategies for dealing with the health effects of climate change in the community.

Additional Requirements

- **Length:** At least 2–3 typed, double-spaced pages, not including the title page and reference page.
- **Font and font size:** Times New Roman, 12-point.
- **Written communication:** Use correct spelling, grammar, and punctuation.
- **Resources:** Integrate information from at least 2 government public health websites.
- **APA format:** Provide a title page and references page. Follow current APA guidelines for in-text citations and the references page.
- **SafeAssign:** For this assignment in this course, use the SafeAssign Draft option to check your writing and ensure that you have paraphrased, quoted, and cited your sources appropriately. Run a SafeAssign report, saving your paper as a draft. Based on your SafeAssign results, make any necessary changes to your paper before submitting your assignment to your instructor for grading.

Submit your A Call to Action memo in the assignment area.

u03d1 - Using Science to Make Priority Decisions

Preparation

You are getting ready to submit the first assignment in your course project, in which you will identify the climate-related public health issue you will examine for the rest of the term. If you have not already done so, make your final choice of the issue at this time.

Public health workers use the principles of epidemiology to build surveillance systems and to investigate threats to the public's health. Now it is time to dig a little deeper into your issue of choice and apply some of the basic principles of epidemiology:

- Frequency distribution.
- Determinants.
- Specified populations.
- Applications.

Initial Discussion Post

In your initial post, address the following:

- What is the frequency of health-related incidents for your chosen issue in your community? Present the data.
- Who is at risk? Is there a pattern of more incidents for some populations than others?
- What are some of the social or other determinants that might create greater risks for some individuals or groups than for others?
- How are public health resources being applied at this time to help control (adapt to) and prevent (mitigate or help end) the risks of climate change on your issue from becoming greater?
- Briefly describe the differences between adaptation and mitigation for your chosen issue, using support from your readings for this unit.

Provide research to support your statements in this and all discussions.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

u03d1 - Learning Components

- Use principles of epidemiology in discussions.
- Practice academic writing skills in discussion activities.

Unit 4 >> Protecting the Air

Introduction

How Do We Know How Safe Our Air Is?

Imagine all of the different factors that influence the air we breathe every day.

There may be seasonal factors. Some days, the air feels thicker than others—especially in the summer, when high levels of particles and ozone matter cause the need for public health warnings. The source could be organic—from tree and grass pollen, such as ragweed and other allergens. Likewise, the source could be soot from wildfires, volcanic ash, or dust blown across dry, parched land.

No matter what the season, humanity creates additional elements, such as discharges from industry, vehicles on the road, people burning leaves, wood-burning fireplaces, and coal-burning stoves. As you can see, the list is long and the factors that affect air quality are many.

Questions to Ask

- What are the monitoring or surveillance systems we have in place to determine the safety of our air?
- Are some populations more vulnerable than others, and, if so, who are they, and how are they adapting to poor air quality?
- Do we have sufficient safeguards in place to protect the air we breathe?
- Is climate change affecting air quality, and how?

Learning Activities

u04s1 - Studies

Required

All of the major environmental factors that are considered in this course (air, water, food, and workplace and natural infection hazards) are monitored by various organizations in the U.S. The basic question is, are the current protections adequate; and are we considering the effects climate change will have on these independent environmental factors?

Air Quality

Read the following materials on air quality:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 10, "Air Quality," pages 240–272.
- D'Amato, G., Vitale, C., Rosario, N., Jose, H., Neto, C., Chong-Silva, D. C., ... D'Amato, M. (2017). Climate change, allergy and asthma, and the role of tropical forests. *World Allergy Organization Journal*, 10(11).
- Maher, K. (2018, May 8). Maryland to other states: Stop sending us your dirty air. *The Wall Street Journal*.

EPA Websites Related to Air Quality

Explore the following government websites that address air quality:

- AirNow. (n.d.). AirCompare home. Retrieved from <https://www3.epa.gov/aircompare/#home>
- AirNow. (n.d.). Retrieved from <https://www.airnow.gov>

Respiratory Dangers

Read the following introduction to air quality and human health:

- National Institute of Environmental Health Sciences (NIEHS). (n.d.). Climate and human health. Retrieved from https://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/asthma/index.cfm

Adaptation or Mitigation

- Complete the An American Family: Adaptation or Mitigation multimedia presentation. In this presentation, you will learn about the important difference between an adaptation to a public health concern influenced by climate change, and a mitigation of that concern through policy or direct action.

Suggested

You are encouraged to use the Environmental Health Resource Repository to expand your understanding of the topics in this course.

- [Environmental Health Resource Repository](#).

u04d1 - The Air We Breathe

Preparation

Imagine that it is August, sometime in the near future. It appears that air quality is affecting health in your community. Outdoor programming for children is being cancelled more frequently, fewer people are taking walks, and construction crews are wearing masks in very hot and humid weather. You have noticed that you are a little short of breath when you spend a long time outside. An elderly neighbor has told you he is experiencing chest pains, while another neighbor recently had a child hospitalized with acute asthma symptoms.

You decide to do some research and you find that, according to the National Institute of Environmental Health Sciences (NIEHS, n.d.):

- Increased ground-level ozone and fine particle concentrations can trigger a variety of reactions, including chest pains, coughing, throat irritation, and congestion, as well as reduce lung function and cause inflammation of the lungs.
- Increased carbon dioxide concentrations and temperatures affect the timing of aeroallergen distribution and amplify the allergenicity of pollen and mold spores.
- The increased frequency of droughts also leads to increased dust and particulate matter in the air.

What the NIEHS is not including are the pollutants coming from cars, power plants, or wildfires in their calculations.

Initial Discussion Post

Based on this context, address the following:

- List the air surveillance measures that are in place in your community.
- Describe how your community compares in air quality to other, similar communities in your state (or elsewhere).
- List two public health adaptation and mitigation strategies for air quality issues that your community has in place to address the safety of the older and younger populations.
- Share a personal experience in which poor air quality affected your life, or the life of someone you know.;

Refer to and cite your readings and other resources in this unit to support your statements.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Reference

National Institute of Environmental Health Sciences (NIEHS). (n.d.). Climate and human health. Retrieved from https://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/asthma/index.cfm

Course Resources

Undergraduate Discussion Participation Scoring Guide

[APA Style and Format](#)

u04d1 - Learning Components

- Describe the risk of exposure to hazardous agents in a community.
- Describe the impact of climate change on health.
- Identify the steps of a risk assessment.

u04d2 - Think Globally, Act Locally on Air Quality

Initial Discussion Post

Starting in your own home or workplace, take a look around at the quality of air in the places you spend most of your time (home, commute, work, leisure activities). Investigate the resources provided in your studies for this unit to learn more about the air quality in these environments and what you can do to improve it. Choose one small step to take this week in improving air quality in your home or workplace.

In your initial post, address the following:

- Describe air quality issues in your personal environment.
- Based on the data you located online, where is the quality of the air you breathe the best? Where is it the worst?
- How does air quality change, based on location, weather, or time of year?
- What one small step did you take this week to improve the air quality of your home or workplace? Would you describe it as an adaptation or a mitigation? Explain.
- How could you extend that step out into your community?

Response Guidelines

No responses are required for this discussion, but you are encouraged to read about your peers' experiences and respond when moved to do so.

Course Resources

Undergraduate Discussion Participation Scoring Guide

u04d2 - Learning Components

- Identify environmental risks in the local community.

Unit 5 >> Ensuring a Safe Water Supply

Introduction

Where does our water come from? It may come from a reservoir or aquifer, a lake or river, a wetland, or a stream. You may have a treatment plant but, as the residents of Flint, Michigan found out, that does not always mean adequate protection.

Many people do not realize the delicacy of the ecological ecosystem that supports a safe water supply. When that ecosystem is disturbed by a chemical spill, flooding, drought, or agricultural runoff, people's lives are put at risk. Contaminants can include flushed pharmaceuticals, and even some personal care products.

Waterborne Illnesses

According to the CDC, "although the U.S. has one of the safest drinking water systems in the world, there are an estimated 4.32 million cases of acute gastrointestinal illness (AGI) per year from public drinking water systems. This estimate does not include waterborne illness from non-public drinking water systems (for example, private wells), recreational water, or water for other uses (for example, irrigation, medical uses, or building water systems)" (n.d.).

However, it is likely that diseases from water exposures are more frequent than is reported; the total amount of waterborne illnesses in the U.S. is unclear (CDC, n.d.). The full scope of waterborne illness in the U.S. requires further study, so that researchers and public health agencies can develop effective preventive measures.

Reference

Centers for Disease Control and Prevention (CDC). (n.d.). Magnitude & burden of waterborne disease in the U.S. Retrieved from <https://www.cdc.gov/healthywater/burden/index.html>

Learning Activities

u05s1 - Assignment Preparation

Explore the following website to help you prepare for the assignment in this unit:

- United States Environmental Protection Agency (EPA). (n.d.). [Conducting a human health risk assessment](https://www.epa.gov/risk/conducting-human-health-risk-assessment). Retrieved from <https://www.epa.gov/risk/conducting-human-health-risk-assessment>

Refer to the following resources as you work on your assignment in this unit:

- [Environmental Risk Assessment Questions \[DOCX\]](#).
- [Theories and Models in Public Health \[PDF\]](#).
- [Environmental Health Resource Repository](#).

u05s2 - Studies

Required

In addition to the assignment preparation studies you are assigned for this unit, you are required to complete the following studies.

Water Quality

Each of the major environmental factors considered in this course is essential to life. Your Friis text provides a good overview of the many possible water quality issues we face in the U.S., and how we have responded to them. Read the following chapter for this unit:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 9, "Water Quality," pages 210–239.

How Safe Is Your Drinking Water?

Read the following articles that address water pollution:

- Dreelin, E. A., Ives, R. L., Molloy, S., & Rose, J. B. (2014). [Cryptosporidium and Giardia in surface water: A case study from Michigan, USA to inform management of rural water systems](#). *International Journal of Environmental Research and Public Health*, 11(10), 10480–10503.
- Ramey, E. (2018). [Former state environmental health official thought Flint water crisis might 'embarrass' governor](http://www.abc12.com/content/news/Former-state-environmental-health-head-thought-Flint-water-emergency-might-embarrass-the-governor-484106701.html). Retrieved from <http://www.abc12.com/content/news/Former-state-environmental-health-head-thought-Flint-water-emergency-might-embarrass-the-governor-484106701.html>

Explore the water safety resources and findings on the following websites:

- United States Environmental Protection Agency (EPA). (n.d.). [Ground water and drinking water](https://www.epa.gov/ground-water-and-drinking-water). Retrieved from <https://www.epa.gov/ground-water-and-drinking-water>
- Environmental Working Group (EWG). (n.d.). [EWG's tap water database](https://www.ewg.org/tapwater/#.WvX1X_kvuuU). Retrieved from https://www.ewg.org/tapwater/#.WvX1X_kvuuU

Industrial Chemicals

Read the following articles that address toxic chemicals in the environment:

- Coleman, R. (2017, August 16). [Update: 'Erin Brockovich' carcinogen in 250 million Americans' drinking water](https://www.ewg.org/enviroblog/2017/08/update-erin-brockovich-carcinogen-250-million-americans-drinking-water#.WvRXZGaZOuo). Retrieved from <https://www.ewg.org/enviroblog/2017/08/update-erin-brockovich-carcinogen-250-million-americans-drinking-water#.WvRXZGaZOuo>
- Feldscher, K. (2016, August 9). [Unsafe levels of toxic chemicals found in drinking water of 33 states](https://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states). *The Harvard Gazette: Health & Medicine*. Retrieved from <https://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states>

Suggested

You are encouraged to refer to the following Campus resource:

- [Public Health Undergraduate Library Research Guide](#).

u05a1 - Environmental Risk Assessment

Overview

For your second course project assignment, you will revisit the same environmental public health issue you chose to address in the previous assignment. You will create an assessment of the environmental risk involved with your chosen issue in the community.

The Environmental Risk Assessment Questions document (linked in the Resources) is based on the EPA's risk assessment criteria. You will use this document to determine how great the health risks are from any hazards or stressors that may be present in the environment.

Instructions

For this assignment, proceed as if the stakeholders you addressed in the memo that you wrote for your first assignment were interested in the issue you presented. Imagine that there is a subcommittee of the community-board group that deals with climate change in the community, and they have asked you for a more detailed risk assessment for their next meeting.

In 4–6 pages, write a detailed environmental risk assessment, based on data you collect using the EPA-based Environmental Risk Assessment Questions document linked in Resources. You will be assessed on the following criteria:

- Critically assess the risk factors, using the EPA-based criteria.
- Describe the relationship between hazardous exposures and human diseases, with regard to your chosen issue.
- Analyze the differences between the stressors that are already in the environment and those that are manmade.
- Use a public health theory or model to support the differences in how the environmental stressors related to your issue impact people in different ways.
- Analyze key conclusions related to your chosen public health issue, based on the best evidence about what makes and keeps people healthy.

The following questions from the United States Environmental Protection Agency will be useful as you prepare for this assignment:

- What types of health problems may be caused by environmental stressors or climate change?
- What environmental stressors are people exposed to, and at what levels, and for how long?
- What is the chance that people will experience health problems when exposed to different levels of environmental stressors?
- Which public health theory or model best supports your discussion about different responses to the environmental stressors in your community?
- Is there a level below which some stressors do not pose a human health risk?
- Are some people more likely to be susceptible to environmental stressors because of factors such as age, genetics, preexisting health conditions, socioeconomic status, ethnic practices, gender, etcetera? (n.d.).

Additional Requirements

- **Length:** At least 4–6 typed, double-spaced pages, not including the title page and reference page.
- **Font and font size:** Times New Roman, 12-point.
- **Written communication:** Use correct spelling, grammar, and punctuation.
- **Resources:** Integrate information from at least 2 scholarly or academic peer-reviewed journal articles.
- **APA format:** Provide a title page and references page. Follow current APA guidelines for in-text citations and the references page.
- **SafeAssign:** For this assignment in this course, use the SafeAssign Draft option to check your writing and ensure that you have paraphrased, quoted, and cited your sources appropriately. Run a SafeAssign report, saving your paper as a draft. Based on your SafeAssign results, make any necessary changes to your paper before submitting your assignment to your instructor for grading.

Submit your Environmental Risk Assessment in the assignment area.

Reference

United States Environmental Protection Agency (EPA). (n.d.). Human health risk assessment. Retrieved from https://19january2017snapshot.epa.gov/risk/human-health-risk-assessment_.html

u05d1 - What Is in Your Water?

Preparation

It is time to consider where your own drinking water comes from and how safe it is.

Clean and safe drinking water is critical to sustaining all life forms. Often, we do not realize how important safe water is until we lose it during an emergency or natural disaster. While tap water in the United States is some of the cleanest in the world, there are many threats to our water supply.

Many citizens do not know that the Safe Drinking Water Act of 1974 (EPA, 2017) only covers 90 different contaminants. Meanwhile, the EPA is currently monitoring over 8,000 other contaminants that studies have linked to cancer, hormonal changes, and other health issues. No new pollutants have been added to the EPA's list since 2000.

The Right to Know

The Safe Drinking Water Act contains a provision called *the right to know*, which emphasizes that "consumers have a right to know what is in their drinking water, where it comes from, how it is treated, and how to help protect it" (United States Environmental Protection Agency, 1999). Based on this provision, you can search for resources to identify your own possible water safety issues.

Initial Discussion Post

Using the EWG website linked in the Resources, research the water quality in your community. Provide a brief summary of the condition of your drinking water. Remember to properly cite the website and any other resources you may use. Then, address the following:

- Describe the population groups in your community.
- Identify where your drinking water comes from.
 - How does it get into your home?
- Explain what you can do to help protect your water supply.
- Use a public health theory or model to help you describe some of the dynamics regarding your community's access to clean drinking water.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

References

United States Environmental Protection Agency (EPA). (2017, January 12). Safe Drinking Water Act (SDWA). Retrieved from <https://www.epa.gov/sdwa>

United States Environmental Protection Agency (EPA). (1999). Understanding the Safe Drinking Water Act. Retrieved from <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf>

u05d1 - Learning Components

- Use data from government public health websites.
- Share observations about the health of the living and working environment.
- Refer to a public health theory or model when discussing environmental health issues.

Unit 6 >> Creating a Food Safety Culture

Introduction

In 2017, one in six Americans got sick from eating contaminated food. That means 48 million people got sick. Of that number, 128,000 were hospitalized and 3,000 died (CDC, n.d.a.). The CDC tracks foodborne illnesses and works with local and state health departments and other agencies to investigate foodborne outbreaks when they occur.

Researchers have identified more than 250 foodborne diseases. Most of them are infections caused by bacteria, viruses, and parasites (CDC, n.d.b.). It is also important to note that toxins and chemicals can contaminate food and cause you to get sick.

Where Does Your Food Come From?

A simple way to begin to understand what is being done to prevent disease-causing germs from contaminating our food is to try and follow a few food items in your own home. How did they get from their origins to your dinner table?

There are many ways "climate-related factors may impact food safety, including changes in temperature and precipitation patterns, increased frequency and intensity of extreme weather events, ocean warming, and acidification" (Tirado, 2010). All of these factors affect how we grow, harvest, process, and deliver our current food supply.

The big question is: how do we create a better food safety culture?

References

Centers for Disease Control and Prevention (CDC). (n.d.a.). Food safety. Retrieved from <https://www.cdc.gov/foodsafety/index.html>

Centers for Disease Control and Prevention (CDC). (n.d.b.). Foodborne illnesses and germs. Retrieved from <https://www.cdc.gov/foodsafety/foodborne-germs.html>

Tirado, M. C., Clarke, R., Jaykus, L. A., McQuatters-Gollop, A., & Frank, J. M. (2010). Climate change and food safety: A review. *Food Research International* 43(7), 1745–1765.

Learning Activities

u06s1 - Assignment Preparation

Each assignment in your course project weaves in concepts and ideas from previous units. Review the project overview in preparation for the upcoming assignments.

In advance of the Unit 7 assignment, read the following article related to the ethical foundations for public health models and theories. Consider this article in the context of the public health model or theory you will use to support your community-based resource guide for your final project.

- Valles, S. A. (2015). [Bioethics and the framing of climate change's health risks](#). *Bioethics*, 29(5), 334–341.

u06s2 - Studies

Required

In addition to your early preparations for Unit 7 assignment, you are required to complete the following studies this week.

Food Safety

Read the following chapters this week in your Friis textbook:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 7, "Pesticides and Other Organic Chemicals," pages 152–180.
 - Chapter 11, "Food Safety," pages 273–310.

You are not expected to become a food safety expert. When visiting the following websites, scan the major topics related to food safety issues, to get an overview of a very interesting area of research and practice in public health. When you visit the CDC website on food safety, go to each link on the homepage and read the page, digging deeper if you find a specific topic that interests you.

Explore the following websites that address food safety:

- Centers for Disease Control and Prevention (CDC). (n.d.). [Food safety](https://www.cdc.gov/foodsafety/index.html). Retrieved from <https://www.cdc.gov/foodsafety/index.html>
- Office of Disease Prevention and Health Promotion (ODPHP). (n.d.). [Food safety](https://www.healthypeople.gov/2020/topics-objectives/topic/food-safety?topicid=14). Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/food-safety?topicid=14>

Climate Change

Read the following articles on climate change:

- Jørgensen, S. L., & Termansen, M. (2016). [Linking climate change perceptions to adaptation and mitigation action](#). *Climatic Change*, 138(1–2), 283–296.
- Watts, N., Adger, W. N., Ayeb-Karlsson, S., Bai, Y., Byass, P., Campbell-Lendrum, D., ... Costello, A. (2017). [The Lancet Countdown: Tracking progress on health and climate change](#). *The Lancet*, 389(10074), 1151–1164.
 - This article presents one of the major tracking networks on health and climate change: the Lancet Countdown. There is also a very good analysis of food safety in this article.

Suggested

You are encouraged to use the Environmental Health Resource Repository to expand your understanding of the topics in this course.

- [Environmental Health Resource Repository](#).

u06d1 - From the Farm to the Table

Scenario

Suppose your family has just finished a wonderful holiday meal. In a few hours, your grandparents and the younger children are showing signs of horrible pain and gastronomical distress. The situation starts getting worse as more people in your family are getting sick. Since you are not currently affected, you take the entire family to the emergency room. It is packed with people of all ages suffering from similar symptoms. You hear a nurse saying, "This looks like an outbreak, let's notify the Department of Public Health."

Initial Discussion Post

For this discussion, choose a common food item from a typical holiday meal (an egg, meat, fish, or vegetable). Using the resources in the studies and your own independent research, try to follow the food item through the stages of production, processing, distribution, and preparation. Remember to cite your resources.

In your initial post, address the following:

- List possible dangers in each of the food chain steps, where the food item you chose could be contaminated.
- Briefly describe two food contamination and poisoning prevention activities currently in place that help to mitigate foodborne illnesses.
- Discuss a public health theory or model that supports these two prevention strategies.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Course Resources

Undergraduate Discussion Participation Scoring Guide

[APA Style and Format](#)

u06d2 - Think Globally, Act Locally on Food Safety

Initial Discussion Post

Starting in your own home or workplace, take a look around at your personal environment as it relates to the food you are eating. Investigate the resources provided in your studies for this unit to learn more about food safety and what you can do to improve it. Choose one small step to take this week in improving food safety in your home or workplace.

In your initial post, address the following:

- List the food safety issues in your personal environment that warrant further investigation.
- Provide some examples of your own level of adherence to food safety practices with the food you eat yourself, feed your family, serve to your guests, or feed your pets.
 - Do you treat each context the same, or do you modify your practices in different settings?
- What one small step did you take this week to improve the food safety of your home or workplace? Would you describe it as an adaptation or a mitigation? Explain.
- How could you extend that step out into your community?

Response Guidelines

No responses are required for this discussion, but you are encouraged to read about your peers' experiences and respond when moved to do so.

Course Resources

Undergraduate Discussion Participation Scoring Guide

u06d2 - Learning Components

- Take action in small ways in the home or community to mitigate or adapt to environmental health risks.
- Find a personal example that tells the story of the impact of a public health issue.

Unit 7 >> Occupational Health Is Public Health

Introduction

Think of all the public health occupations affected by workplace safety risks, such as:

- Public health nurses dealing with infectious diseases.
- Epidemiologists investigating dangerous and sometimes contagious outbreaks of all kinds.

- Emergency response team members dealing with floods, tornadoes, spills, and explosions.
- Public health outreach workers in violence-prone neighborhoods.

There are also increased occupational health and safety risks associated with climate change that will be covered in this unit.

NIOSH and OSHA

The National Institute for Occupational Safety and Health (NIOSH) was established to conduct research on how to promote productive, healthy, and safe workplaces. Their surveillance efforts span the workplace spectrum from epidemiology dealing with lead, to childhood agricultural injury prevention, to pesticide illnesses and injuries. There are 26 surveillance initiatives currently active in NIOSH (CDC, n.d.).

NIOSH and the Occupational Safety and Health Administration (OSHA) are both rich sources source of local, state, and national data and ideas, as well as successful, evidence-based programs on how to intervene to prevent risks in the workplace.

References

Centers for Disease Control and Prevention (CDC). (n.d.). The National Institute for Occupational Safety and Health (NIOSH): Worker health surveillance. Retrieved from <https://www.cdc.gov/niosh/topics/surveillance/data.html>

United States Department of Labor, Occupational Safety and Health Administration (OSHA). (n.d.). Retrieved from <https://www.osha.gov>

Learning Activities

u07s1 - Assignment Preparation

Review the following two websites, which will be helpful to you when preparing for the last two assignments in the course. If you have not already bookmarked these in your browser, do so now.

- Centers for Disease Control and Prevention (CDC). (n.d.). [CDC's building resilience against climate effects \(BRACE\) framework](https://www.cdc.gov/climateandhealth/BRACE.htm). Retrieved from <https://www.cdc.gov/climateandhealth/BRACE.htm>
- United States Environmental Protection Agency (EPA). (n.d.). [Conducting a human health risk assessment](https://www.epa.gov/risk/conducting-human-health-risk-assessment). Retrieved from <https://www.epa.gov/risk/conducting-human-health-risk-assessment>

Refer to the following resources as you complete the assignment in this unit:

- [Theories and Models in Public Health \[PDF\]](#).
- [Environmental Health Resource Repository](#).

u07s2 - Studies

Required

In addition to your assignment preparation studies for this unit, you are required to complete the following studies.

Occupational Health

Occupational health is part of environmental health. It is important to see the connection between the risks and hazards that occur naturally where we work, and those that we produce. Read the following chapter in your Friis text this week for a broad overview:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 13, "Occupational Health," pages 332–364.

Explore the U.S. government's OSHA website:

- [United States Department of Labor, Occupational Safety and Health Administration \(OSHA\)](https://www.osha.gov). (n.d.). Retrieved from <https://www.osha.gov>

Impact of Climate in the Workplace

Explore the following CDC Web pages addressing occupational safety and health:

- Centers for Disease Control and Prevention (CDC), The National Institute for Occupational Safety and Health (NIOSH). (n.d.). [Impact of climate on workers](https://www.cdc.gov/niosh/topics/climate/how.html). Retrieved from <https://www.cdc.gov/niosh/topics/climate/how.html>

Occupational Risks

Read the following articles that address workplace health issues:

- Macdonald, W., & Oakman, J. (2015). [Requirements for more effective prevention of work-related musculoskeletal disorders](#). *BMC Musculoskeletal Disorders*, 16, 1–9.
 - This article considers adaptation and mitigation of common workplace risks.
- Rebmann, T., & Carrico, R. (2017). [Consistent infection prevention: Vital during routine and emerging infectious diseases care](#). *Online Journal of Issues in Nursing*, 22(1), 1–14.
- Schulte, P. A., Whittaker, C., & Curran, C. P. (2015). [Considerations for using genetic and epigenetic information in occupational health risk assessment and standard setting](#). *Journal of Occupational & Environmental Hygiene*, 12, S69–S81.
 - This article will push you to consider the new science of genetic information in setting occupational risk assessments.

Suggested

You are encouraged to refer to the following Campus resource:

- [Public Health Undergraduate Library Research Guide](#).

u07a1 - Applying Public Health Theories and Models in Prevention Strategies

Overview

For your third course project assignment, you will revisit the same environmental public health issue you chose to address in the previous assignments.

Suppose that the community stakeholder group wants to develop a community resource guide, to help the community be more proactive with the issue you have chosen. First, though, the executive director of the community stakeholder group wants to see a more complete justification for moving ahead on the development of the community resource guide. You have been directed to write a memo containing an evidence-based rationale in support of recommended adaptation and mitigation strategies.

Instructions

Write a 4–6 page memo that contains the evidence-based rationale that supports your recommended adaptation and mitigation strategies for the environmental health issue you have chosen, based on a public health theory or model.

- Identify at least one public health theory or model and provide a referenced-based description of the theory or model as it relates to an environmental risk or risks.
 - Refer to the Theories and Models in Public Health document linked in Resources.
- Select prevention strategies associated with your chosen theory or model, and provide insights and ideas on how to plan for mitigating the issue or preventing it from happening in the community.
- Apply the components of the theory or model to further analyze the appropriateness of the adaptation and mitigation strategies under consideration.

Your memo must contain the following points, which correspond to the grading criteria for this assignment:

- Describe how climate change impacts your public health issue.
- List the hazardous agents and other systemic exposure factors related to your public health issue.
- Select evidence-based interventions to help your community adapt to, mitigate, or prevent hazards related to your chosen issue that pose a risk to human health and safety.
- Provide a referenced-based description of public health theories and models related to your chosen environmental health issue.
 - Directly support your selected interventions with the appropriate public health theory or model to address your public health issue.
 - Identify parts of the theory or model that have informed your thinking about what you want to include in the community resource guide.
 - Show how the theory or model supports the need for creating a community resource guide.
- Include a request to move the community resource guide project forward.

Remember to use a memo format for this assignment, as you did with the A Call to Action assignment.

Additional Requirements

- **Length:** At least 4–6 typed, double-spaced pages, not including the title page and reference page.
- **Font and font size:** Times New Roman, 12-point.
- **Written communication:** Use correct spelling, grammar, and punctuation.
- **Resources:** Integrate information from at least 2 scholarly or academic peer-reviewed journal articles.
- **APA format:** Provide a title page and references page. Follow current APA guidelines for in-text citations and the references page.
- **SafeAssign:** For this assignment in this course, use the SafeAssign Draft option to check your writing and ensure that you have paraphrased, quoted, and cited your sources appropriately. Run a SafeAssign report, saving your paper as a draft. Based on your SafeAssign results, make any necessary changes to your paper before submitting your assignment to your instructor for grading.

Submit your Applying Public Health Theories and Models in Prevention Strategies memo in the assignment area.

Course Resources

[Environmental Health Resource Repository](#) | Transcript

[APA Style and Format](#)

Theories and Models in Public Health [PDF]

[SafeAssign](#)

u07d1 - How Dangerous Is Your Workplace?

Scenario

Put yourself in the position of a migrant worker whose family is harvesting sugar beets in northwestern Minnesota. You are concerned about the fact that your family has missed time in the fields every picking season for the last five years, due to illnesses. Trips to urgent care facilities have dramatically reduced your earnings, and you think the exposure to many hazards has made everyone in the family weaker and more susceptible to other illnesses.

You consider the climate and other environmental factors that may be impacting your health. You are in northwestern Minnesota at the end of September, and, like many migrants and other day laborers, you have inadequate housing, as well as other social and economic constraints, which could exacerbate your exposure to health hazards.

Suppose you see a National Institute for Occupational Safety and Health (NIOSH) poster with an e-mail address posted near a cooling shed in the field. You decide to seek information from NIOSH to help protect your family.

Initial Discussion Post

In your initial post, address the following:

- Based on the above scenario, make a list of all the hazards you see confronting your family, with the intent of sending it to someone at NIOSH.
- Next, take the role of a NIOSH staff member who responds to the migrant worker's e-mailed list of hazards. Suggest three safety and health prevention steps the family members can take to either mitigate or adapt to the hazards they face.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Course Resources

APA Style and Format

u07d1 - Learning Components

- Discuss the interrelationships of different risk factors related to environment hazards.

Unit 8 >> Preventing Infectious Outbreaks

Introduction

Infectious Diseases

Infectious diseases are generally caused by germs or organisms such as bacteria, fungi, viruses, or parasites (Mayo Clinic, n.d.). There are many ways you can get an infectious disease, such as from person-to-person contact, through bites from insects or animals, by eating or drinking contaminated food or water, or by being exposed to infected organisms in your daily environment.

Dictates of Climate

Some infectious outbreaks that we are all familiar with, such as Lyme disease, dengue fever, and the Zika virus, can be considered climate-sensitive (Harvard T. H. Chan School of Public Health, n.d.). This simply means the climate dictates whether or not the carrier of the disease can survive or thrive under certain climatic conditions. This is not an exact science, but we know that more severe weather events like floods or hurricanes increase the risks for infectious diseases.

Tracking and intervening to prevent serious outbreaks of human- or vector-caused diseases requires a broad network of organizations, coupled with the support of the affected community. Can we be better prepared to combat infectious diseases?

References

Harvard T. H. Chan School of Public Health. (n.d.). Climate change and infectious disease. Retrieved from <https://chge.hsph.harvard.edu/climate-change-and-infectious-disease>

Mayo Clinic. (n.d.). Infectious diseases. Retrieved from <https://www.mayoclinic.org/diseases-conditions/infectious-diseases/symptoms-causes/syc-20351173>

Learning Activities

u08s1 - Studies

This is a long-term problem that's going to getting worse, and it requires a sustained response over time.

Lyle Petersen, Director of the CDC's Division of Vector-Borne Diseases (as cited in Sun, 2018).

Required

Complete the following studies this week.

Zoonotic and Vector-Borne Diseases

Read the following chapter in your Friis textbook this week:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 5, "Zoonotic and Vector-Borne Diseases," pages 94–128.

Explore the following website resources on vector-borne diseases:

- County of Los Angeles Public Health. (n.d.). [Acute communicable disease control: Vector-borne & zoonotic diseases](http://publichealth.lacounty.gov/acd/Vector.htm). Retrieved from <http://publichealth.lacounty.gov/acd/Vector.htm>
 - This website provides a look at how the County of Los Angeles approaches this issue.

•

Centers for Disease Control and Prevention (CDC). (n.d.). [Tickborne diseases of the United States](https://www.cdc.gov/ticks/diseases/index.html). Retrieved from <https://www.cdc.gov/ticks/diseases/index.html>

Read the following articles on vector-borne diseases:

- Sun, L. H. (2018, May 1). [Diseases spread by ticks, mosquitoes and fleas more than tripled in the U.S. since 2004](#). *The Washington Post*.
- World Health Organization (WHO). (2017, October 31). [Vector-borne diseases](#). Retrieved from <http://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>
 - The World Health Organization is another good resource for approaches to vector-borne diseases.

Infectious Diseases

Read the following article on infectious diseases:

- Mayo Clinic. (n.d.). [Infectious diseases](#). Retrieved from <https://www.mayoclinic.org/diseases-conditions/infectious-diseases/symptoms-causes/syc-20351173>

Reference

Sun, L. H. (2018, May 1). Diseases spread by ticks, mosquitoes and fleas more than tripled in the U.S. since 2004. *The Washington Post*.

u08d1 - Pets: Our Canaries in the Coal Mine

Scenario

Suppose your beloved dog feels hot and has had a loss of appetite, reduced energy, stiffness, and discomfort over the last 30 days. You look beneath the fur at her skin and see an expanding red area that forms a bull's eye pattern that is clear in the center.

You take her to the vet and, after a blood test, he tells you that your dog has Lyme disease. Most likely, it is from a deer tick. He explains that the tick population has tripled in your area because the climate has stayed warmer longer in recent years, and more ticks have been able to survive. He begins a treatment of an antibiotic, which can relieve the symptoms, but he tells you that, as with humans, prolonged treatment will probably be necessary.

Initial Discussion Post

In your initial post, address the following:

- Describe the status of the tick population in your area.
 - Summarize all of the symptoms of Lyme disease and other tick-borne illnesses in pets.
 - Identify the tests used to diagnose Lyme disease.
 - Elaborate on how the disease is treated and recommend at least three prevention strategies other pet owners could use.
- How might climate change be affecting a rise in vector-borne illnesses?
- If your dog has Lyme disease, what is your own level of risk? Use research to support your statement.
- How would you go about getting information out to other dog owners about how to reduce the risks and impact of vector-borne diseases to themselves and their pets?

Remember to properly cite your resources.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

APA Style and Format

u08d2 - Think Globally, Act Locally on Vector-Borne Diseases

Initial Post

Starting in your own home and neighborhood, take a look around at your personal environment. Look for spaces or places specifically related to the insects that carry vector-borne disease. Investigate the resources provided in your studies for this unit to learn more about vector-borne diseases in these environments and what you can do to address them. Choose one small step to take this week in improving the control of insects in your home or neighborhood.

In your initial post, address the following:

- What spaces or places warrant further investigation when it comes to identifying disease-carrying insects?
- Identify some of the health issues you and your neighbors face in relation to vector-borne dangers.
- What one small step could an individual take to improve the control of insects in his or her home or neighborhood? Would you describe this step as an adaptation or a mitigation?
- What small step did you take this week for yourself or your neighborhood? Explain.
- How could you extend that step out into your community?

Response Guidelines

No responses are required for this discussion, but you are encouraged to read about your peers' experiences and respond when moved to do so.

Course Resources

Undergraduate Discussion Participation Scoring Guide

u08d2 - Learning Components

- Examine evidence-based strategies designed to address environmental health issues.

Unit 9 >> Pulling It All Together

Introduction

Experts in the field of public health are always looking to find evidence-based strategies and collaborative opportunities to work on prevention efforts. The lack of resources makes a collaborative approach a necessity and not an option. Experience shows that, usually, more brains are better than one, when it comes to preventing or solving problems.

Adaptation and Mitigation

Besides a collaborative approach, an important component in creating a healthier environment is the development of sound public health strategies and actions. One focus in this course has been on how to develop viable adaptation and mitigation approaches for climate change-related health issues. As you get ready for the assignment in this unit, here is another example of the difference between adaptation and mitigation strategies:

A recent CDC report (2018) showed that 23,000 Americans die each year from infections caused by antibiotic-resistant germs. The CDC calls these the "nightmare bacteria."

The current *adaptation* strategy is to urge people to:

- Tell their doctors if they have recently had health care in another country.
- Get information on how to prevent infections and chronic conditions.
- Get their families up to date on vaccines.
- Wash their hands regularly and keep cuts cleaned until healed.

The *mitigation* strategy is to:

- Cut back on antibiotic use in humans and animals.
- Strengthen cleanliness standards in nursing homes and hospitals.
- Create a new generation of non-resistant antibiotics.

You are expected to discuss both types of strategies in your final community resource guide, due this week.

Reference

Centers for Disease Control and Prevention (CDC). (2018, April 3). Antibiotic resistance: Containing unusual resistance. Retrieved from <https://www.cdc.gov/vitalsigns/containing-unusual-resistance/index.html>

Learning Activities

u09s1 - Assignment Preparation

Your final assignment is to adapt the BRACE framework to create a community resource guide. Review the assignment, its scoring guide, and the project overview for the full information on completing this assignment. Use the information and concepts from the following required resources to complete the assignment.

Examine the infographics on the following CDC website to help you prepare to create your own infographic:

- Centers for Disease Control and Prevention (CDC). (n.d.). [Health, United States – Infographics](https://www.cdc.gov/nchs/hus/infographic.htm). Retrieved from <https://www.cdc.gov/nchs/hus/infographic.htm>

Refer to the following resource, which you have read previously during the course:

- Centers for Disease Control and Prevention (CDC). (n.d.). [CDC's building resilience against climate effects \(BRACE\) framework](https://www.cdc.gov/climateandhealth/BRACE.htm). Retrieved from <https://www.cdc.gov/climateandhealth/BRACE.htm>

You will also need to refer to the following resources as you complete this assignment:

- [Environmental Health Resource Repository](#).
- [BRACE Model](#).

u09s1 - Learning Components

- Study strategies communities use to strategically address the impact of climate on public health.
- Identify multiple ways of communicating critical public health information.

u09s2 - Studies

Required

In addition to your assignment preparation studies for this unit, you are required to complete the following studies.

Environmental Policy

Read the following chapter in the Friis textbook this week:

- Friis, R. H. (2019). *Essentials of environmental health* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
 - Chapter 4, "Environmental Policy and Regulation," pages 68–96.

Core Partners in Climate Change Efforts

Explore the following CDC websites, which will give you a good picture of what is already going on (and has been going on since 2006) in the CDC and with various collaborators.

- Centers for Disease Control and Prevention (CDC). (n.d.). [Climate and health](https://www.cdc.gov/climateandhealth/default.htm). Retrieved from <https://www.cdc.gov/climateandhealth/default.htm>
- Centers for Disease Control and Prevention (CDC). (n.d.). [Climate-ready states & cities initiative grantees](https://www.cdc.gov/climateandhealth/crsci_grantees.htm). Retrieved from https://www.cdc.gov/climateandhealth/crsci_grantees.htm

Suggested

You are encouraged to refer to the following Campus resource:

- [Public Health Undergraduate Library Research Guide](#).

u09a1 - Building Resistance Against Climate Effects

Overview

For your final project assignment, you will create a community resource guide to help your chosen community adapt to, and possibly mitigate (reduce), the effects of climate change on the local public health issue you have been studying. You will also create an infographic to accompany the resource guide.

Review the course project description, your work on the previous project assignments, and the assignment scoring guide to prepare for this assignment.

Instructions

Create a 12–15 page comprehensive community resource guide to address the effects of climate change on the public health issue you have chosen to examine for this project. Base your resource guide on the CDC's BRACE guidelines for a local community organization. To accompany the resource guide, create an infographic that could be presented to a local community stakeholders meeting, highlighting the key elements that can be found in the guide.

Your comprehensive resource guide must include the following:

- Cover Page.
- Table of Contents.
- Problem Identification:
 - A community profile that includes:
 - Background information on the population demographics, including the social and economic disparities.
 - A list of key stakeholder groups and roles.
 - Specific climate impacts and potential health outcomes. Pay particular attention to vulnerable populations and locations associated with these health outcomes.
 - An inventory of risks and opportunities.
 - An estimate or quantification of the additional burden of health outcomes associated with climate change.
- Adaptation and Mitigation Strategies:
 - Create a table of recommended adaptation and mitigation strategies, including priorities, lead responsibility, and fit with existing evidence based successful programs. Include:
 - Three adaptation strategies.
 - Three mitigation strategies.
- Infographic.
- A Strategy for Evaluation and Sustainability.
- References (in APA style and format).

Your resource guide must contain the following points, which correspond to the grading criteria for this assignment:

- Create a comprehensive resource guide to help a community strategically build resistance against climate effects on public health.
- Use the BRACE model to identify risks and strategies that can be used to address environmental health risks in the community.
- Compare and contrast evidence-based interventions used in communities with similar environmental health issues.
- Summarize applicable principles of epidemiology used to support environmental adaptation and mitigation strategies.
- Identify the differences between physical, social, and health risks associated with environmental exposures.
- Quantify the additional burden of health outcomes associated with climate change.
- Create an infographic to communicate critical information about the environmental health issue.

Additional Requirements

- **Length:** Your resource guide must be a minimum of 12–15 double-spaced pages in length, not including the title and reference pages.
- **Font and font size:** Times New Roman, 12-point.
- **Written communication:** Use correct spelling, grammar, and punctuation.

- **APA format:** Provide a title page and references page. Follow current APA guidelines for in-text citations and the references page.
- **SafeAssign:** For this assignment in this course, use the SafeAssign Draft option to check your writing and ensure that you have paraphrased, quoted, and cited your sources appropriately. Run a SafeAssign report, saving your paper as a draft. Based on your SafeAssign results, make any necessary changes to your paper before submitting your assignment to your instructor for grading.

Submit your Building Resistance Against Climate Effects resource guide in the assignment area.

Course Resources

[BRACE Model](#) | Transcript

[Environmental Health Resource Repository](#) | Transcript

[CDC's Building Resilience Against Climate Effects \(BRACE\) Framework](#)

[APA Style and Format](#)

[Health, United States – Infographics](#)

[SafeAssign](#)

u09d1 - Mitigation and Adaptation Strategies

Preparation

"By 2006, most scientists had recognized the need to prepare for the impact climate change would likely have on health, both in the U.S. and worldwide. In 2009, the CDC formally established the Climate and Health Program" (CDC, n.d.a.). The mission of this program was to promote collaboration and develop leadership with "state and local governments, community leaders, healthcare professionals, nongovernmental organizations, the faith-based communities, the private sector and the public, domestically and internationally, regarding health protection from climate change effects" (CDC, n.d.b.).

There are now 16 states and two cities that are operating climate change-related health programs built around the building resilience against climate effects (BRACE) framework.

Initial Discussion Post

For this discussion, research climate change mitigation and adaptation strategies related to a public health issue in the United States. Then, expand your search and locate one other strategy being used beyond the borders of the U.S. for a similar issue.

In your initial post, address the following:

- Describe two examples of mitigation and adaptation strategies for your public health issue in the United States.
- Describe a strategy being used in another country to address a similar issue.
 - How is that country going about addressing the similar issue?
 - How is their approach similar and how is it different from the strategies you researched from the United States?

Remember to properly cite your resources.

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In your response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

References

Centers for Disease Control and Prevention (CDC). (n.d.a.). About us. Retrieved from <https://www.cdc.gov/climateandhealth/about.htm>

Centers for Disease Control and Prevention (CDC). (n.d.b.). CDC policy. Retrieved from <https://www.cdc.gov/climateandhealth/policy.htm>

Course Resources

Undergraduate Discussion Participation Scoring Guide

APA Style and Format

Unit 10 >> Future Challenges and Personal Reflections

Introduction

Throughout this course, you have been challenged to think about the role of climate change in environmental health for you and your community.

Worldwide Efforts for a Healthier Environment

In a rapidly shrinking world, everyone, regardless of their country of origin, is susceptible to catastrophic health outcomes, unless we all work together with a common prevention vision.

In this course, we have examined the effects of climate change on environmental health. We have critically analyzed our current surveillance and prevention systems. And we have considered successful interventions to address important public health issues.

Each of you has made a personal effort throughout the course to contribute to a healthier environment. Your efforts are part of larger, internationally growing effort for a healthier environment for us all.

Consider the following:

The One Health Initiative

The One Health Initiative is an international, collaborative approach between human, animal, and environmental health communities.

Recognizing that human health (including mental health via the human-animal bond phenomenon), animal health, and ecosystem health are inextricably linked, One Health seeks to promote, improve, and defend the health and well-being of all species by enhancing cooperation and collaboration between physicians, veterinarians, and other health and environmental professionals and by promoting strengths in leadership and management to achieve these goals. When properly implemented, it will help protect and save untold millions of lives in our present and future generations.(CDC, n.d.)

Sustainable Development Goals

The following is the United Nations' description of worldwide sustainability goals, as they apply to climate change:

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. Affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient economies. The pace of change is quickening as more people are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts.(United Nations, n.d.)

What Next?

As you critically reflect on your learning in this course, have you identified any false assumptions you had before about any of the content covered? What practices have you uncovered that you would like to change within the public health environment? How might you help to facilitate change while honoring others with whom you work?

References

Centers for Disease Control and Prevention (CDC). (n.d.). One Health basics. Retrieved from <https://www.cdc.gov/onehealth/basics/index.html>

United Nations. (n.d.). Climate change affects everyone. Retrieved from <https://www.un.org/sustainabledevelopment/climatechange>

Learning Activities

u10s1 - Studies

Required

Remember, examining a website means carefully reading the homepage, and then touring the site and finding pages that relate to the future of public health issues and climate change. The websites assigned in this unit provide a good overview of where the field of public health is heading.

One Health Initiative

Explore the following resources for an introduction to the worldwide movement based on the One Health Initiative:

- One Health Initiative. (n.d.). [Mission statement](http://www.onehealthinitiative.com/mission.php). Retrieved from <http://www.onehealthinitiative.com/mission.php>
- Centers for Disease Control and Prevention (CDC). (n.d.). [One Health basics](https://www.cdc.gov/onehealth/basics/index.html). Retrieved from <https://www.cdc.gov/onehealth/basics/index.html>

Current BRACE Initiatives

Explore the following website to learn what one state (Minnesota) is doing to comprehensively combat climate change, working with a One Health and BRACE conceptual framework:

- Minnesota Department of Health. (n.d.). [Climate and health](http://www.health.state.mn.us/climatechange). Retrieved from <http://www.health.state.mn.us/climatechange>

Minneapolis, Minnesota has been selected as one of the 100 Resilient Cities in an initiative spearheaded by the Rockefeller Foundation. Explore the following website to learn more about how climate and health are viewed by cities around the world in relation to many other stressors.

- [100 Resilient Cities](http://100resilientcities.org). (n.d.). Retrieved from <http://100resilientcities.org>

Climate Change and Health

Review the following article on what the World Health Organization (WHO) is doing about climate change:

- World Health Organization (WHO). (2018, February 1). [Climate change and health](http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health). Retrieved from <http://www.who.int/en/news-room/fact-sheets/detail/climate-change-and-health>

The Future of Environmental Health

To see what your role, as a public health practitioner, might look like in the future, compare and contrast the following articles:

- Erwin, P. C., & Brownson, R. C. (2017). [The public health practitioner of the future](#). *American Journal of Public Health*, 107(8), 1227–1232.
- Nicholas, P. K., & Breakey, S. (2017). [Climate change, climate justice, and environmental health: Implications for the nursing profession](#). *Journal of Nursing Scholarship*, 49(6), 606–616.

Controversies

Read the following article, which addresses an environmental controversy in the public health arena:

- Ramey, E. (2018). [Former state environmental health official thought Flint water crisis might 'embarrass' governor](http://www.abc12.com/content/news/Former-state-environmental-health-head-thought-Flint-water-emergency-might-embarrass-the-governor-484106701.html). Retrieved from <http://www.abc12.com/content/news/Former-state-environmental-health-head-thought-Flint-water-emergency-might-embarrass-the-governor-484106701.html>

Films on Demand Video

- Gilner, R. (Producer). (2004). [Education for what? Learning social responsibility \[Video\]](#). Films on Demand.
 - In this video, you will learn how college students can help solve community problems as part of their educational curriculum. The video examines how a broad range of programs across the U.S. helps students engage in service learning.
 - Running time: 57:39.

u10d1 - The Environment and Health Are Everyone's Future

Course Reflection

You are nearly finished with this course. This is a significant accomplishment on your part.

In your discussions throughout this course, you have been asked to take several small steps to identify and do things to improve the environment in your home, neighborhood, or community. As learners in this course, you and your peers have created positive outcomes in thinking globally and acting locally in small, incremental ways. As you are fully aware, even small steps, made regularly, require a certain level of commitment and determination.

Initial Post

As a final reflection of what you have learned in this course, address the following:

- Create a small journal listing all of the small steps to think globally and act locally that you have personally taken throughout the course.
 - Describe how each action you have taken relates to the One Health mission and objectives described in your studies for this unit.
- Provide a few examples of new things you have learned about environmental health through this course.
 - How has your thinking changed or expanded on climate change and its health effects on all living species?
- What would you suggest to improve this course?

Response Guidelines

Read the posts of your peers and respond according to the Faculty Expectations Message guidelines. In each response, include most or all of the following:

- **Engage your peer.** Tell your peer specifically why you chose to respond to his or her post.
- **Seek clarification.** Talk about what may be unclear. Ask questions. Offer suggestions.
- **Make it real.** Include personal examples or work experiences that add perspective to your reply.
- **Be a practitioner-scholar.** In addition to your personal or work experience, include at least one referenced academic resource in your reply. Use current APA style and formatting appropriate to the type of reference you provide.

Course Resources

[Undergraduate Discussion Participation Scoring Guide](#)

[One Health Basics](#)

[One Health Initiative: Mission Statement](#)

[APA Style and Format](#)

