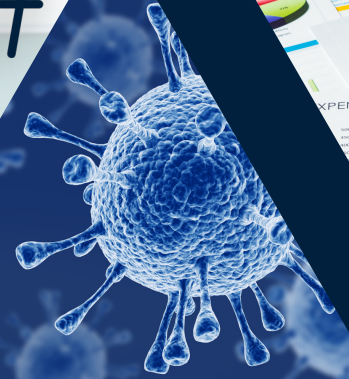


Integrating Public Health Content into the Classroom



Introduction

Hello! Welcome to *Integrating Public Health Content into the Classroom*. This guidebook is designed to assist educators, counselors, and public health professionals wishing to expose high school students to the dynamic field of public health. This resource provides content that can be seamlessly integrated into the classroom to foster a deeper understanding of public health concepts and encourage career exploration. Packed with engaging activities, links to industry websites and a curated collection of public health career resources, this guidebook equips educators with the tools they need to inspire and educate their students about the multifaceted world of public health. Educators can use this guidebook to enrich their curriculum, spark curiosity, and empower students to make informed decisions about their future career pathways.

The COVID-19 pandemic irrevocably altered the public health landscape in the United States, calling attention to the importance of a well-prepared, robust, diverse public health workforce. As a result, to ensure the future of our public health workforce, increased emphasis must be placed on developing future public health professionals. This includes increasing public health content delivered in the classroom and expanding students' understanding of public health and healthcare career opportunities. Furthermore, teaching public health in the formative high school years is a fantastic way to encourage students to start thinking about their future careers. All their lives, they've been asked, "what do you want to be when you grow up" and in high school, they start turning thoughts into actions. Career exploration allows students to contemplate their interests, values and skills, hopefully culminating in a career they look forward to waking up for everyday. Moreover, the central public health tenants of communication, problem-solving, cultural competency and leadership will serve students well in and out of their careers.

Please Note: The following disclaimer is intended to emphasize the responsibility of teachers in assessing the suitability of instructional materials: Teachers are advised to exercise their professional judgment in evaluating the appropriateness of educational materials to ensure alignment with their curriculum, instructional goals and the needs of their students.

Acknowledgments

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Introduction to Public Health



Public Health[®]
Prevent. Promote. Protect.



Introduction to Public Health

What is public health? According to the American Public Health Association, public health promotes and protects the health of people and the communities where they live, learn, work and play.

What Makes Public Health Unique?

Public Health	Clinical Medicine
A Population is the "Patient" (State, County, City)	Focus on Individual Patients
Disease Prevention	Disease Treatment
Monitor Statistics and Devise Preventive Interventions	Diagnosis and Treatment

Public Health tries to prevent people from becoming sick or injured and promotes wellness by encouraging healthy behaviors such as tobacco cessation, promoting physical activity and proper nutrition.

Short introductory videos-Click on the video titles to view

▶ What is Public Health? Episode 1 of "That's Public Health" (video length: 4:07)

Developed by the American Public Health Association, the "That's Public Health" series features short, easy-to-understand videos on a range of public health topics. Episode 1 introduces students to public health basics and why the field is so important.

▶ What is Public Health? Crash Course Public Health #1 (video length: 12:44)

Developed by CrashCourse, this video details how public health prevents disease, prolongs life and promotes health.

Public Health Key Terms

When teaching about public health, there are several key terms to be familiar with;

Clinical care: prevention, treatment, and management of illness and preservation of mental and physical well-being through services offered by medical and allied health professions; also known as health care.

Determinant: a factor that contributes to the generation of a trait.

Epidemic: occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related event clearly above normal expectancy. Both terms are used interchangeably; however, epidemic usually refers to a larger geographic distribution of illness or health-related events.

Health outcome: the result of a medical condition directly affecting the length or quality of a person's life.

Healthy equity: the state in which everyone has a fair and just opportunity to attain their highest level of health.

Intervention: an action that produces an effect or is intended to alter the course of a pathologic process.

Pandemic: denoting a disease affecting or attacking the population of an extensive region, country, or continent.

Population health: an approach to health that aims to improve the health of an entire population.

Prevention: an action to avoid, forestall, or circumvent a happening, conclusion, or phenomenon (e.g., disease)

For additional public health terminology, visit the following websites;

1. Oregon Health Authority
<https://www.oregon.gov/oha/ph/About/TaskForce/Documents/public-health-terminology.pdf>
2. Bethel University
<https://www.bethel.edu/undergrad/academics/nursing/professional-development/public-health/public-health-glossary-of-terms.pdf>

Activity #1: Public Health 101 Series CDC

Type of Activity: PowerPoint, E-learning Course, Webinar

Competencies Addressed: C.H.1, ES.H.1, ES.H.6, ES.H.17

Estimated Time of Activity: Powerpoint 1 hour, E-Learning Course 1 hour, Webinar 52 minutes


Supplies Needed: Computer, Wifi

Activity Description: The Public Health 101 Series provides an introduction to public health and covers the sciences essential to public health practice (CDC, 2018).

The series is designed for

- Persons new to public health
- Public health educators
- Individuals interested in pursuing public health careers.

Available Materials

1. Slide Presentation - To access the Introduction to Public Health PowerPoint, [click here](#)
 - These slide sets are in the public domain and can be downloaded and customized as needed by the user. Permission from the Centers for Disease Control and Prevention is not required, but citations for the sources are appreciated (CDC, 2021).
 - **Note:** Slide 29 uses the old Ten Essential Public Health Services (EPHS) framework. Update the slide using the 2020 revised EPHS. [Click here](#) to access the updated framework.
2. E-Learning Course
 - E-Learning course - [Introduction to Public Health](#)
3. Webinar-click on the title below to access the webinar
 -  Introduction to Public Health

4. Pre/Post-Public Health Knowledge Assessment: Before introducing students to the Public Health 101 Series, use the Pre-Assessment: Public Health Knowledge to gauge what your students already know. After completing the Public Health 101 series, have students take the Post-Assessment: Public Health Knowledge to see what they have learned.

Pre-Assessment: Public Health Knowledge

1. Public health aims to provide _____ with the right to be healthy and live in conditions that support health.
 - A. Groups of people
 - B. Individuals
2. Which of the following events in public health history have been pandemics? Select all that apply.
 - A. Siege of Kaffa
 - B. Influenza
 - C. Polio
 - D. Hurricane Katrina
3. True or False: A health outcome is the result of a medical condition that directly affects the length or quality of a person's life.
 - A. True
 - B. False
4. Which of the following are the three core functions of public health?
 - A. Assessment, Policy Development, Assurance
 - B. Surveillance, Assurance, Assessment
 - C. Policy Development, Vaccinations, Assurance
5. True or False: According to the World Health Organization, the mission of public health aims to provide maximum benefit for the largest number of people.
 - A. True
 - B. False

Post-Assessment Public Health Knowledge

1. Public health aims to provide _____ with the right to be healthy and live in conditions that support health.
 - A. Groups of people
 - B. Individuals

2. Which of the following events in public health history have been pandemics? Select all that apply.
 - A. Siege of Kaffa
 - B. Influenza
 - C. Polio
 - D. Hurricane Katrina

3. True or False: A health outcome is the result of a medical condition that directly affects the length or quality of a person's life.
 - A. True
 - B. False

4. Which of the following are the three core functions of public health?
 - A. Assessment, Policy Development, Assurance
 - B. Surveillance, Assurance, Assessment
 - C. Policy Development, Vaccinations, Assurance

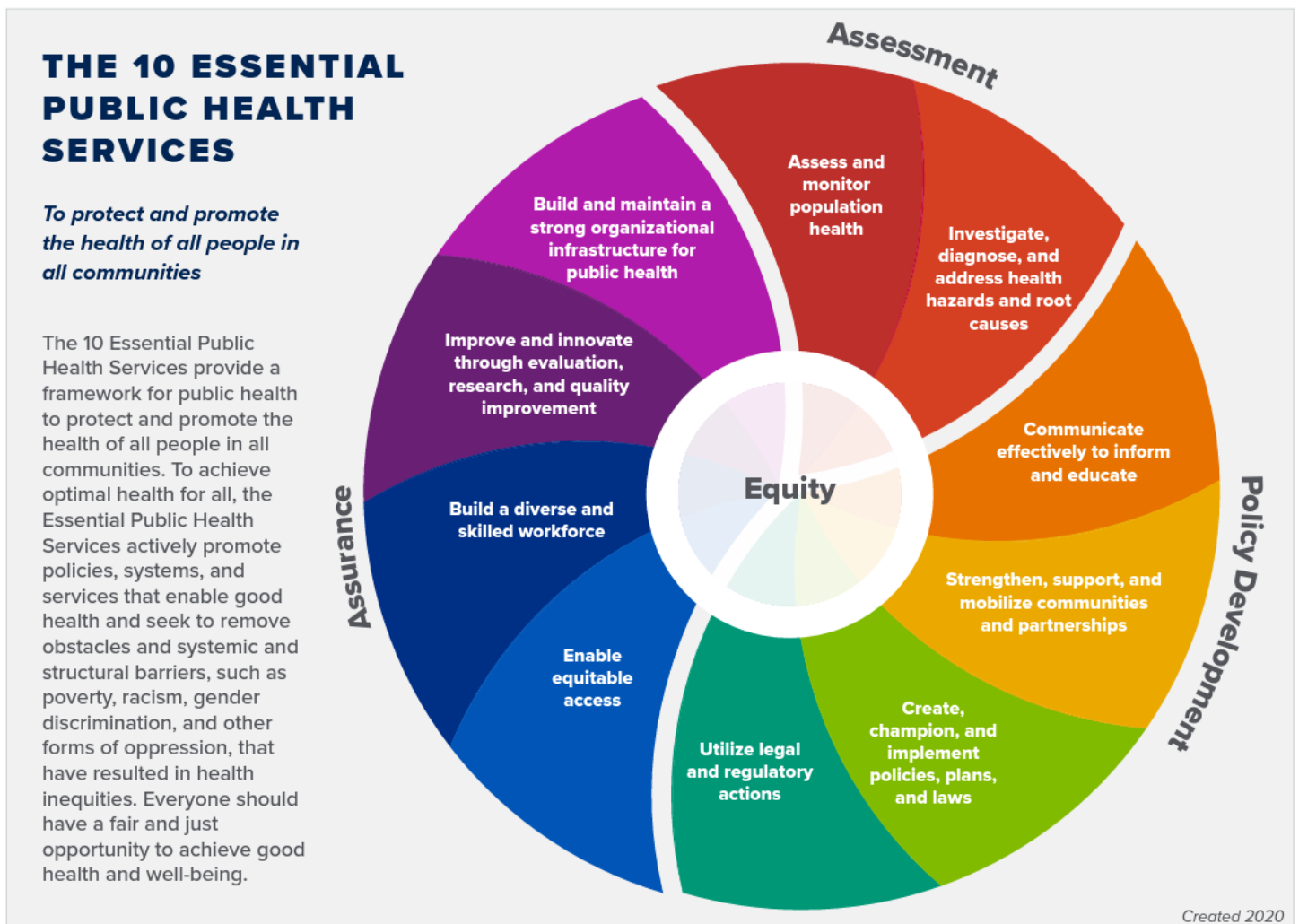
5. True or False: According to the World Health Organization, the mission of public health aims to provide maximum benefit for the largest number of people.
 - A. True
 - B. False

Answer Key: 1-A, 2-B&C, 3-A, 4-A, 5-A

10 Essential Public Health Services

The 10 Essential Public Health Services (EPHS) describe public health activities that should be present in every community.

The EPHS provide a framework for public health to protect and promote the health of all people in all communities. To achieve equity, the Essential Public Health Services actively promotes policies, systems, and overall community conditions that enable optimal health for all and seek to remove system and structural barriers resulting in inequities. Such barriers include poverty, gender discrimination and other forms of oppression.



- 1.) To learn more about the Ten Essential Public Health Resources, visit [CDC - Ten Essential Public Health Services](#).

Available materials

- 10 Essential Public Health Services-One Pager (Provides a brief one-page summary of the EPHS).
- 10 Essential Public Health Services- Full (provides a detailed description of each Essential Public Health Services)
- Examples of How Social Determinants of Health Can be Addressed Through the 10 Essential Public Health Services. Learn how the EPHS can incorporate interventions to modify social determinants of health—the conditions in the places where people are born, live, learn, work, play, worship, and age (CDC, 2023).

Activity # 2: Introduction to the Ten Essential Public Health Services

Type of Activity: Interactive discovery game

Academic Standards Addressed: ES.H.1, ES.H.6, ES.H.17

Estimated Activity Time: 50 minutes

Supplies Needed: Large poster paper or whiteboards, markers and Essential Public Health Services handouts.

Activity Description: This activity aims to introduce participants to public health and provide a brief overview of the Ten Essential Public Health Services. Through engaging discussions and interactive exercises, participants will gain an understanding of the core functions and scope of public health practice.

- 1.) To begin, explain the importance of public health in promoting and protecting community well-being.
Provide a brief overview of the Ten Essential Public Health Services as a framework for public health practice.
- 2.) Group Discussion (10 minutes)
 - Divide participants into small groups.
 - Assign each group one of the Ten Essential Public Health Services.
 - Provide each group with a handout summarizing their assigned service.
 - Visit [CDC - Ten Essential Public Health Services](#) and scroll to the resources section to access 10 Essential Public Health Services – Full handout.
 - Instruct the groups to read the handout and discuss within their group how they think their assigned service contributes to public health.
- 3.) Service Showcase (10 minutes)
 - Allocate a portion of the room for each Essential Public Health Service.

- Assign each group to a designated area based on their assigned service.
- Instruct each group to visually represent their assigned service on the provided poster paper or whiteboard using markers and drawings.
- Encourage creativity and emphasize the key aspects of the service.

4.) Gallery Walk and Reflection (15 minutes)

- Instruct students to walk around the room and observe each group's visual representation of their assigned Essential Public Health Service.
- Encourage participants to take notes and reflect on each service's key components and contributions.
- Facilitate a group discussion where participants share their observations, ask questions, and discuss the interrelationships between different services.

Additional Introductory Public Health Resources

1. **The American Public Health Association:** is professional membership and advocacy organization for public health professionals. APHA is the largest professional organization of public health professionals in the United States.
<https://www.apha.org/>
2. **Centers for Disease Control and Prevention:** is the nation's leading science-based, data-driven service organization that protects the public's health.
<https://www.cdc.gov/>
3. **Educators 4SC:** Is a website with resources for teaching about public health. Resources include lesson plans, articles and information sites all related to public health.
<https://educators4sc.org/teaching-about-public-health/>
4. **Healthy People:** Since 1980, Healthy People has set measurable objectives to improve the health and well-being of people nationwide. At the beginning of every decade, a new iteration of the initiative that addresses the latest public health priorities and challenges is launched.
<https://health.gov/our-work/national-health-initiatives/healthy-people>
5. **Kentucky Department for Public Health:** The Kentucky Department for Public Health (KDPH) is responsible for developing and operating state public health programs and activities for the citizens of Kentucky.
<https://www.chfs.ky.gov/agencies/dph/Pages/default.aspx>
6. **Public Health Merit Badge Helps and Documents:** This website is aimed towards Scouts; however, the content is applicable to all student learners. Materials include how to prevent the spread of disease, explore how pandemics happen and what steps can be taken to prevent outbreaks. Additionally, there are resources related to public health careers.
<https://scoutermom.com/25409/public-health-merit-badge-helps-and-documents/#req8>

Sources

CDC Online Newsroom - Press Release: June 23, 2011. (n.d.). CDC Online Newsroom - Press Release: June 23, 2011.

https://www.cdc.gov/media/releases/2011/p0623_publichealth.html

FastStats. (2023, January 18). FastStats - Leading Causes of Death.

<https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>

How Temperatures Affect Food | Food Safety and Inspection Service. (n.d.). How Temperatures Affect Food | Food Safety and Inspection Service.

<https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/how-temperatures-affect-food#:~:text=Cook%20all%20raw%20ground%20beef,measured%20with%20a%20food%20thermometer.>

Introduction to Public Health | Public Health 101 Series | CDC. (2021, January 22). Introduction to Public Health | Public Health 101 Series | CDC.

<https://www.cdc.gov/training/publichealth101/public-health.html>

Principles of Epidemiology | Lesson 1 - Section 11. (2012, May 18). Principles of Epidemiology | Lesson 1 - Section 11. <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section11.html>

Smallpox. (2021, November 10). Smallpox.

https://www.who.int/health-topics/smallpox#tab=tab_1



Environmental Health



Topic: Environmental Health

What is environmental health? As defined by the American Public Health Association, Environmental health is the branch of public health that: focuses on the relationships between people and their environment; promotes human health and well-being; and fosters healthy and safe communities (Environmental Health, n.d).

Short Introductory Videos-Click on the video titles to view.

- ▶ How does environment affect our health? Episode 10 of "That's Public Health" (video length: 4:31).
- ▶ What is Environmental Health? NYU School of Global Public Health (video length: 2:38).
- ▶ Why Are Environmental Health Services So Important? (video length: 3:05).

Environmental Health Topics

Click on the environmental health topics below to learn more. For a comprehensive list of topics, visit the Centers for Disease Control and Prevention's National Center for Environmental Health (NCEH) [CDC | National Center for Environmental Health](#).

[Air Quality](#)

[Biomonitoring](#)

[Climate and
Health](#)

[Environmental
Health Services](#)

[Food Safety](#)

[Human Exposure
to Environmental
Chemicals](#)

[Mold](#)

[Radiation
Emergencies](#)

[Research](#)

[Safe Water](#)

Activity #1: Reading Drinking Water Reports

Type of Activity: Lessons and Worksheet

Competencies Addressed: ES.H.1, ES.H.9, ES.H.17

Estimated Time of Activity: 50 minutes

Supplies Needed: Highlighters for scavenger hunt, background reading, activity worksheet, your community's annual drinking water report (background reading and activity worksheet provided in activity).

Activity Description: Students are introduced to drinking water standards, the Safe Drinking Water Act and terminology found in a typical annual water quality report. Students read their community's water report and find specific information through a scavenger hunt.

Note: The activity details how to access your community drinking water report.

- 1.) To begin, visit Oregon State University's Hydroville Curriculum Project <https://blogs.oregonstate.edu/hydroville/download/>
- 2.) Scroll down and select the PDF version of "Reading Water Quality Reports."
- 3.) Follow the activity prompts and modify the activity for your students as needed.

Activity #2: Name that Indoor Air Quality Hazard

Type of Activity: Video and Discussion

Competencies Addressed: ES.H.2, ES.H.3, ES.H.17

Estimated Time of Activity: 50 minutes

Supplies Needed: IAQ hazard game keys, IAQ hazard game sheets, IAQ hazard ID cards, sticky notes, envelope to hold game cards

Activity Description: Students are introduced to various common indoor air quality (IAQ) hazards. They will learn sources of hazards, route(s) of exposure, associated health symptoms, and methods for hazard control.

- 1.) To begin, visit Oregon State University's Hydroville Curriculum Project <https://blogs.oregonstate.edu/hydroville/download/>
- 2.) Scroll down and select the PDF version of "Name That IAQ Hazard."
- 3.) Follow the activity prompts and modify the activity for your students as needed.

Activity #3: Siting Yoretown's Landfill

Type of Activity: Video and Discussion

Competencies Addressed: HS-ESS3-4, HS-ESS3-2, ETS1.B, ES.H.1, ES.H.2, ES.H.6, ES.H.9, ES.H.18,

Estimated Time of Activity: 50-55 Minutes

Supplies Needed: Rulers, 1 copy/student of Siting Yoretown's New Landfill Information Sheet

Activity Description: In this activity, students will use a city map, topographic map, and siting criteria to rank four sites for a city landfill.

- 1.) To begin, visit Oregon State University's Hydroville Curriculum Project [Download « Hydroville Curriculum Project](#).
- 2.) Scroll to "Siting Yoretown's Landfill" and select PDF.
- 3.) Follow the activity prompts and modify the activity for your students as needed.
- 4.) Have students visit the World Health Organization (WHO) and read the article titled, [Guidance on solid waste and health](#).
- 5.) Ask students to write a 500-word essay on why waste management is important to public health.

Activity #4: Foodborne Outbreak

Type of Activity: Video and Discussion

Competencies Addressed: ES.H.1, ES.H.6, ES.H.9, ES.H.18



Estimated Time of Activity: 90 minutes or two 45-minute class periods

Supplies Needed: Video playing capabilities, computer, internet access, one copy/student of America's Most Unwanted & Don't Let Food Spoil Your Fun.

Activity Description: In this two-part activity, students will learn about foodborne illnesses, their causes, prevention strategies and the importance of food safety.

Part One

1.) To begin, show either of the following video clips to introduce students to foodborne illness.

-  [How FDA Investigates Foodborne Illness Outbreaks](#) (video length: 12:08)
-  [CDC in Action: Foodborne Outbreaks](#) (video length: 2:20)
- [Timeline for Identifying and Reporting Cases in Foodborne Outbreaks | CDC](#)

2.) Have students visit [Foods That Can Cause Food Poisoning | CDC](#) and explore the website to learn about foods associated with foodborne illnesses. Have students visit [Food Poisoning Symptoms | CDC](#) to learn about food poisoning symptoms.

Note: This activity will require students to search for answers on both websites, encourage them to click on different links and think critically to find the needed answers.

3.) Using the information from the two websites mentioned above, have the students complete America's Most Unwanted chart.

America's Most Unwanted

Instructions: Using the below websites, complete the following chart on various foodborne illnesses and their associated foods, symptoms, and prevention measures. Note: multiple foods may be listed under the foods that cause illness category.

1. [Foods That Can Cause Food Poisoning | CDC](#)
2. [Food Poisoning Symptoms | CDC.](#)

Microorganism	Foods that cause the illness	Symptoms	How to prevent this illness
Campylobacter			
E. Coli			
Salmonella			
Clostridium perfringens			
Cryptosporidium "Crypto"			

Listeria			
Norovirus			

Answer Key

Microorganism	Foods that cause the illness	Symptoms	How to prevent this illness
Campylobacter	Raw/undercooked poultry, meat and seafood, raw milk	Diarrhea (often bloody), fever, stomach cramps	Thoroughly cook poultry and meat to a safe internal temperature Don't consume raw milk
E. Coli	Fruits and vegetables, raw milk,	Severe stomach cramps, diarrhea (often bloody), vomiting	Ensure produce is washed thoroughly or cooked,
Salmonella	Fruits and vegetables, raw milk, eggs, poultry and meat.	Diarrhea (can be bloody), fever, stomach cramps, vomiting	Thoroughly wash or cook produce, cook eggs until yolks and whites are firm, and cook poultry and meat to a safe internal temperature.
Clostridium perfringens	Poultry and meat	Diarrhea, stomach cramps that last for less than 24 hours	Keep cooked food at 140°F or hotter or 40°F or colder
Cryptosporidium "Crypto"	Contaminated water, raw milk	Diarrhea, stomach pain, dehydration, nausea, vomiting	Do not drink untreated water from lakes, rivers, or ponds drink pasteurized milk
Listeria	Raw milk, soft cheeses, fruits and vegetables,	Fever and flu-like symptoms (muscle ache, fatigue, stiff neck, headache, etc.)	Don't consume raw milk; instead consume pasteurized milk and cheese heated to 165 °F.

Norovirus	Seafood and raw shellfish	Diarrhea, vomiting, nausea, stomach pain.	Cook seafood to 145°F, and heat leftover seafood to 165°F.

Part Two

1. To begin, have students visit the [CDC's List of Multiple Foodborne Outbreak Notices](#) website; it contains multistate foodborne outbreaks for which the CDC led the investigation and issued outbreak notices since 2006.
2. Have students select an outbreak and ask them to complete the activity located on the next page. Ask for volunteers to give a summary to the class on the outbreak they choose.

Multistate Foodborne Outbreak Report

Instructions: Select a multistate foodborne outbreak using the CDC's [List of Multiple Foodborne Outbreak Notices](#) and complete the following questions using the investigation details provided about each outbreak.

1. What is the contaminated food?

2. What is the germ responsible for the outbreak (e.g., Salmonella)?

3. What year did this multistate outbreak occur?

4. How many illnesses occurred?

5. Where did the sick people live?

6. How many states were impacted?

7. When did people get sick?

8. How many hospitalizations occurred?

9. How many deaths? _____

10. Is this investigation status active? _____

11. What advice does the CDC give to consumers who purchased this recalled product?

12. Based on the information above, create a summary of the outbreak to share with the class who are unfamiliar with this particular outbreak.

Additional Websites with Environmental Health Topics

- **Environmental Health - World Health Organization (WHO):** The WHO's website includes a section on environmental health, offering information on global environmental health priorities, campaigns, and publications related to environmental risks and health impacts
https://www.who.int/health-topics/environmental-health#tab=tab_1
- **Kentucky Department for Public Health's Environmental Management Branch:** The Environmental Management Branch is located within the Division of Public Health Protection and Safety and supports the Department for Public Health's mission to prevent disease by eliminating existing unsanitary conditions and safety hazards in public facilities and private dwellings.
<https://www.chfs.ky.gov/agencies/dph/dphps/emb/Pages/default.aspx>
- **National Center for Environmental Health (NCEH):** The National Center for Environmental Health (NCEH) is a division of the Centers for Disease Control and Prevention (CDC) in the United States. NCEH is responsible for protecting and promoting public health by addressing environmental factors that can impact human health. The center focuses on various areas, including air and water quality, toxic substances, climate change, environmental justice, and the health effects of environmental hazards.
<https://www.cdc.gov/nceh/>
- **National Environmental Health Association (NEHA):** NEHA's website serves as a platform for environmental health professionals, offering resources, training opportunities, and publications related to environmental health practices, policies, and advocacy
<https://www.neha.org/>
- **Occupational Safety and Health Administration (OSHA):** While primarily focused on workplace safety, OSHA's website also covers occupational and environmental health topics. It provides information on standards, regulations, and resources for protecting workers from hazards in their environment
www.osha.gov
- **U.S Environmental Protection Agency (EPA):** The EPA's website provides information on environmental health issues, regulations, and initiatives, including air and water quality, toxic substances, and environmental assessments.
<https://www.epa.gov/>

- **U.S. Food and Drug Administration (FDA):** The FDA is a federal agency within the Department of Health and Human Services in the United States. The FDA is responsible for protecting and promoting public health by regulating various products, including food, drugs, vaccines, medical devices, cosmetics, and tobacco products.
<https://www.fda.gov>

Activity Sources

Introduction

Environmental Health. (n.d.).

<https://www.apha.org/topics-and-issues/environmental-health#:~:text=Environmental%20health%20is%20the%20branch,fosters%20healthy%20and%20safe%20communities.>

Activity #1

For Educators. (2001, June 6). National Institute of Environmental Health Sciences.

<https://www.niehs.nih.gov/health/scied/teachers/index.cfm>

Hydroville Curriculum Project. (n.d.). Hydroville Curriculum Project.

<https://blogs.oregonstate.edu/hydroville/download/>

Activity #2

Hydroville Curriculum Project. (n.d.). Hydroville Curriculum Project.

<https://blogs.oregonstate.edu/hydroville/download/>

Activity #3

Hydroville Curriculum Project. (n.d.). Hydroville Curriculum Project.

<https://blogs.oregonstate.edu/hydroville/download/>

Activity #4

Foods Linked to Illness. (2022) Centers for Disease Control and Prevention.

<https://www.cdc.gov/foodsafety/foods-linked-illness.html>

List of Multistate Foodborne Outbreak Notices | CDC. (2023, March 30). List of Multistate Foodborne Outbreak Notices | CDC.

<https://www.cdc.gov/foodsafety/outbreaks/lists/outbreaks-list.html>



Epidemiology



Activity #1: Introduction to Epidemiology

Type of Activity: Video & Question/Answer session


Academic Standards Addressed: ES.H.1, C.H.1

Estimated Time of Activity: 20 minutes

Supplies Needed: Internet connection, video playing capabilities

Activity Description: Explore the foundations of Epidemiologists and what they do -- Epidemiologists study who gets what diseases, where and how they get them and when.

1.) To begin, show Intro to Epidemiology: Crash Course Public Health #6.

 Intro to Epidemiology: Crash Course Public Health #6 (video length: 14:49)

2.) After viewing the video above, complete the 'Think' questions below.

1. Epidemiology is the study of what?
 - a. Disease
 - b. Skin
 - c. Planets
 - d. None of the above

2. The word Epidemiology is derived from three words – Epi, Demos, and Logos. What do these words mean?

3. Epidemiologists use different types of scientific studies to evaluate hypotheses. What are the two types of epidemiological studies mentioned in the video?

4. True or False: Observational studies simply compare an already-exposed group to a non-exposed group.
 - a. True
 - b. False

5. In the example of cheese consumption and death by bedsheet tangling, we learned that Epidemiologists interpret data to see if it actually means anything. What does the phrase “Correlation does not imply causation” mean?

6. In Rothman’s Causal Pie example of Tuberculosis, what were some of the parts of the pie (or causes) of Tuberculosis?
 - a. Compromised Immune System
 - b. Poor Ventilation
 - c. Overcrowded Homes & Communities
 - d. All of the above

Answer key

1. Epidemiology is the study of what?
 - a. Disease**
 - b. Skin
 - c. Planets
 - d. None of the above

2. The word Epidemiology is derived from three words – Epi, Demos, and Logos. What do these words translate to?

A: Upon, People, Study

3. Epidemiologists use different types of scientific studies to evaluate hypotheses. What are the two types of epidemiological studies mentioned in the video?

A: Experimental Studies and Observational Studies.

4. True or False: Observational studies simply compare an already-exposed group to a non-exposed group.
- a. **True**
 - b. False
5. In the example of cheese consumption and death by bedsheet tangling, we learned that Epidemiologists interpret data to see if it actually means anything. What does the phrase “Correlation does not imply causation” mean?
- A:** Just because two things seem related doesn’t mean that one caused the other.
6. In Rothman’s Causal Pie example of Tuberculosis, what were some of the parts of the pie (or causes) of Tuberculosis?
- a. Compromised Immune System
 - b. Poor Ventilation
 - c. Overcrowded Homes & Communities
 - d. **All of the above**

Activity # 2: Germ Theory and John Snow

Type of Activity: Video & Question/Answer session

Academic Standards Addressed: ES.H.1, C.H.1

Estimated Time of Activity: 30 minutes

Supplies Needed: Internet connection, video playing capabilities

Activity Description: For centuries, people thought wandering clouds of poisonous vapor made us sick. We now know this theory is incorrect and that bacteria and viruses cause disease. Tien Nguyen describes the work of several scientists who discredited a widely accepted theory in a way beneficial to human health.

- 1.) To begin, show the video, [How a few scientists transformed the way we think about disease - Tien Nguyen](#) (video length: 4:38)
- 2.) Complete the 'Think' questions provided below.
 1. The prevailing theory for the cause of disease for hundreds of years was the miasma theory. In miasma theory, what was thought to cause disease?
 - A. Bad water
 - B. Rotten food
 - C. Germs
 - D. Poisonous vapor
 2. What was a symptom of cholera that made Dr. Snow suspect that the disease was transmitted through drinking contaminated water?
 - A. Coughing
 - B. Diarrhea
 - C. Headaches
 - D. Soreness

3. Which of the following examples supported Dr. Snow's case against miasma theory?
 - A. The widow who lives far away but drank water from the Broad Street pump
 - B. The workhouse with few victims and its own water source
 - C. The infant who had cholera and whose diapers were thrown next to the wall
 - D. All of the above

4. Which famous scientist isolated the cholera-causing bacterium and performed experiments that helped confirm germ theory?
 - A. Louis Pasteur
 - B. John Snow
 - C. Robert Koch
 - D. Agostino Bassi

5. Why didn't governmental officials believe Dr. John Snow's theory that contaminated water was the source of cholera's spread?
 - A. They did not want to admit that there was human waste in London's water supply.
 - B. Miasma theory had been the prevailing theory for hundreds of years
 - C. Dr. Snow did not have direct evidence supporting his case
 - D. All of the above

Answer Key: 1-D, 2-B, 3-D, 4-C, 5-D

3.) Spark group discussion with the provided discussion questions. Break students into three separate groups and give each group one of the following three discussion prompts:

1. Though Dr. Snow made a good argument for germ theory, how could he have strengthened his case?

2. Why can it be challenging to change people's minds about something, even when there is data or evidence to support it?

3. Germ theory has revolutionized public health. How do you think humankind has benefited from this discovery? (hint, think about water quality, waste management, etc.)
- 4.) Bring students together to share each group's thoughts on their discussion prompt.

Activity # 3: Concepts of Disease Occurrence and Chain of Infection

Type of Activity: Video & Question/Answer session

Academic Standards Addressed: ES.H.1, C.H.1

Estimated Time of Activity: 20 minutes

Supplies Needed: Internet connection, video playing capabilities

Activity Description: A critical part of epidemiology is that diseases and other health events do not occur randomly in a population. Some groups are more at risk for getting certain diseases or are more affected during events than others due to risk factors. Risk factors increase the likelihood of developing a disease or a negative health outcome (e.g. smoking increases the risk of lung cancer). One important use of epidemiology is identifying the factors that place some members at greater risk than others (Principles of Epidemiology, 2012).

1.) To Begin, show the video on the Epidemiologic Triangle.


 What is Epidemiology? (video length: 2:11)

2.) Review with the students that breaking the connection between the host, agent and environment stops a disease in its tracks.

On the whiteboard, write the following:

- Epidemiologic Triangle = Host, Agent, and Environment
- Who – the host or person/people who have the disease
- What – the agent or what causes the disease
- Where – the environment (or place) where the disease occurs

Keeping these concepts in mind, show students the following video:

Typhoid Mary --  What Really Happened with Typhoid Mary? (video length: 4:02)

3.) Have students answer the question, In the case of “Typhoid Mary,” identify the agent, host, and environment.

1. The agent is the cause of the disease.
2. The host is a human or animal that is susceptible to the disease –
3. The environment is the domain in which disease-causing agents may exist, survive, or originate.

Answer Key

1. The agent is the cause of the disease.

A: bacterium Salmonella Typhi.

2. The host is a human or animal that is susceptible to the disease –

A: Mary

3. The environment is the domain in which disease-causing agents may exist, survive, or originate.

A: Mary was a carrier and the environment was her feces.

Activity #4: Outbreak at Watersedge A Public Health Discovery Game

Type of Activity: Interactive discovery game

Academic Standards Addressed: ES.H.1, ES.H.17, ES.H.18, C.H.1

Estimated Activity Time: 1 hour, depending on how fast the students complete the activity.

Supplies Needed: Internet connection, video playing capabilities

Activity Description: This interactive game allows students to apply their investigative skills to discover the source of the outbreak and stop it before more Watersedge residents get sick. It allows students to learn how public health professionals investigate disease outbreaks and work collaboratively to promote health and prevent illness. The University of Minnesota created the Outbreak at Watersedge simulation.

Please note: Once the game is started, it cannot be paused. If the game is left, students will need to start over.

Roles introduced:

- Epidemiologist
- Environmental Health Specialist
- Health Educator
- Microbiologist
- Public Health Nurse
- Public Health Information Officer
- Health Planner

- 1.) To begin, direct students to the Outbreak at Watersedge website
<http://www.mclph.umn.edu/watersedge/>

- 2.) Have students complete the activity and answer the following questions while working through the virtual simulation.

Outbreak at Watersedge

Instructions: Answer the following questions while completing the Outbreak at Watersedge activity.

1. What is Leslie Hernandez's occupation and job description (hint: click on her name to read her bio)?

2. Read about the London Cholera Epidemic featured in the Public Health Newsletter located on the bulletin board. Who was the physician that proved Cholera was spread through contaminated food or water and how did he prove this?

3. Who is Terry Tower? What is her job description? What are her areas of expertise?

4. What does Shoua Shinde say is the next step following the interviews? Why is it important to complete this step?

5. How many people interviewed reported being at the following locations? Why is it important to collect this information?
 - Watersedge Mall:
 - Sippy's Coffee Shop:
 - Watersedge Zoo:
 - Thompson Park:
 - Movie Theater:
 - Watersedge Community Recreation Center:

6. What pathogen caused the outbreak?

7. What was the source of the outbreak?
 - a. The water fountain due to a filter that malfunctioned.
 - b. The ballpark
 - c. The zoo
 - d. The swimming

8. What contributed to the outbreak at Watersedge?

9. Ted Hawthorne, Public Health Information Office, is working to develop a press release to notify the public of the outbreak. What information should he include that would be important for the general public to be aware of?

10. What did you learn about public health's role in a disease outbreak?

Answer Key

1. What is Leslie Hernandez's occupation and job description (hint: click on her name to read her bio)?

A: Leslie is a Health Planner: Her job is to determine health trends and what a community needs to be safe and healthy. Additionally, she provides information to those who set public policy and make laws.

2. Read about the London Cholera Epidemic featured in the Public Health Newsletter located on the bulletin board. Who was the physician that proved Cholera was spread through contaminated food or water and how did he prove this?

A: Dr. John Snow. John Snow proved that cholera was spread through contaminated food/water by plotting the location of deaths related to Cholera on a map of the city. By mapping the locations of deaths, Snow could pinpoint one of the major sources of the disease.

3. Who is Terry Tower? What is her job description? What are her areas of expertise?

A: Terry is a public health nurse. She assesses people to identify health problems and links them to the services they need. During an epidemic, she interviews people who are sick and collects crucial specimens. Her areas of expertise are nursing, biology, physiology, psychology, epidemiology and interpersonal communication.

4. What does Shoua Shinde say is the next step following the interviews? Why is it important to complete this step?

A: We need to explore the top visited place, the park. It allows environmental health professionals to take samples of potential outbreak sources.

5. How many people interviewed reported being at the following locations? Why is it important to collect this information?

- Watersedge Mall:
- Sippy's Coffee Shop:
- Watersedge Zoo:
- Thompson Park:

- Movie Theater:
- Watersedge Community Recreation Center:

A:

- Watersedge Mall: **2**
- Sippy's Coffee Shop: **1**
- Watersedge Zoo: **2**
- Thompson Park: **5**
- Movie Theater: **1**
- Watersedge Community Recreation Center: **1**

Collecting this information allows investigators to map out visits and see the most visited location.

6. What pathogen caused the outbreak?

A: Cryptosporidium

7. What was the source of the outbreak?

- a. The water fountain due to a filter that malfunctioned.**
- b. The ballpark
- c. The zoo
- d. The swimming

8. What contributed to the outbreak at Watersedge?

A: Heavy rains, water runoff from cattle far, malfunctioning water fountain filter and parasites in the well.

9. Ted Hawthorne, Public Health Information Office, is working to develop a press release to notify the public of the outbreak. What information should he include that would be important for the general public to be aware of?

A: What caused the outbreak, how the health department is working to fix the outbreak and any other information the students think should be included.

10. What did you learn about public health's role in a disease outbreak?

A: Student answers will vary. However, answers may include the investigative nature of public health, communication and working to prevent additional cases.

Additional Epidemiology Resources

1. **American Journal of Epidemiology (AJE)** - AJE's website is the official site of the journal and provides access to articles, research findings, and editorial content in the field of epidemiology. It covers a wide range of topics and promotes the exchange of knowledge among epidemiologists
www.academic.oup.com/aje
2. **Division of Epidemiology and Health Planning, Kentucky Department for Public Health**
<https://www.chfs.ky.gov/agencies/dph/dehp/Pages/default.aspx>
3. **Epidemiology Training & Resources:** The Epidemic Intelligence Service, through the Centers for Disease Control and Prevention, compiled a list of trainings and resources.
<https://www.cdc.gov/eis/request-services/epiresources.html>
4. **Index of Educational Activities Organized by Topic:** Activities were designed for teachers to use in the classroom. They have been aligned with Next Generation Science Standards and CDC's Epidemiology and Public Health Science: Core Competencies for High School Students. Teachers are encouraged to tailor the activities to meet the needs of their students.
<https://www.cdc.gov/scienceambassador/educational/active-activities.html>
5. **Principles of Epidemiology in Public Health Practice:** Educators use Principles of Epidemiology (PDF) as a resource to learn about methods to investigate public health problems.
<https://www.cdc.gov/careerpaths/k12teacherroadmap/classroom/principlesofepi.html>
6. **World Health Organization (WHO)** - The WHO's website features an epidemiology section covering global health surveillance, disease control and prevention, and outbreak response. It offers access to reports, publications, and data related to epidemiological research and public health emergencies.
www.who.int/health-topics/epidemiology

Activity Sources

Activity #1

Intro to Epidemiology: Crash Course Public Health #6. (2022, September 8). YouTube.
https://www.youtube.com/watch?v=_luU3I03JwE

Activity #2

How a few Scientists Transformed the Way we think about Disease - Nguyen, Tien. (n.d.). How a Few Scientists Transformed the Way We Think About | TED-Ed.
<https://ed.ted.com/lessons/how-a-few-scientists-transformed-the-way-we-think-about-disease-tien-nguyen>

Activity #3

Centers for Disease Control and Prevention. (2012). *Principles of Epidemiology*. Centers for Disease Control and Prevention.
<https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section8.html>

Activity #4

Outbreak at Watersedge (n.d). <http://www.mclph.umn.edu/watersedge/>



Health Equity



Topic: Health Equity

What is Health Equity? As defined by the U.S. Department of Health and Human Services, health equity is the attainment of the highest level of health for all people. Population-level factors, such as the physical, built, social and policy environments, can have a greater impact on health outcomes than individual-level factors such as age and genetics (CDC, 2020).

Short Introductory Videos-Click on the video titles to view

▶ **What is Health Equity? Episode 2 of "That's Public Health"**(video length: 3:52)

Health Equity is a public health approach that tackles health differences that are unavoidable, unnecessary and unjust and works to improve everyone’s health. Learn how in this episode of “That’s Public Health” web series from the American Public Health Association and Complexly (APHA, n.d)

▶ **Health Equity** (video length: 4:15)

This video explains health equity and the interconnected factors that contribute to health inequities and health disparities (CDC Health Equity Video Series, 2023)

▶ **Social Determinants of Health**(video length: 3:24)

This video provides information about how social determinants of health (SDOH), the conditions in which people are born, grow, work, live and age, influence health outcomes and shape our daily lives (CDC Health Equity Video Series, 2023).

▶ **Intersectionality** (video length: 2:15)

Intersectionality is defined as the interconnected structures and systems that create inequality among people and populations based on social categories of difference (such as race, class and gender). This video explores the significance of intersectionality and its role in health outcomes (CDC Health Equity Video Series, 2023).

Activity #1: The Tuskegee Syphilis Experiment

Type of Activity: Video & Quiz

Academic Standards Addressed: ES.H.13, ES.H.18

Estimated Time of Activity: 50 minutes

Supplies Needed: Internet connection, video playing capabilities

Activity Description: Evaluate the injustices' that took place during the infamous Tuskegee Syphilis experiment. Afflicting nearly 1 in 10 Americans, syphilis was ravaging the U.S. in the 1930s. Many doctors believed syphilis affected Black and White patients differently, and the Public Health Service launched an experiment to investigate, recruiting 600 Black men to participate. But the study was centered on a lie: the men wouldn't actually receive treatment. Susan Reverby details the Tuskegee Syphilis Study (Reverby, n.d.).

- 1.) To begin, start by showing the video ['Ugly History: The U.S. Syphilis Experiment- Susan M. Reverby'](#) (video length: 5:18).
- 2.) Complete the 'Think' questions provided below.
 1. In the 1930s, common treatments for syphilis, a sexually transmitted infection, were:
 - A. Guaiacum, or holy wood
 - B. Penicillin
 - C. Antibiotics
 - D. Mercury and Bismuth
 2. The men in the study in Tuskegee were:
 - A. Told they were in an experiment and were being treated

- B. Told they were being treated by doctors for their “bad blood.”
 - C. Told they were making a great contribution to American science
 - D. Asked if they wanted to participate in this research
3. The purpose of the study was to:
- A. Test a new cure for syphilis
 - B. Provide care for people in Tuskegee
 - C. Show that Black people did not want to be in medical research studies
 - D. Determine if treatment was needed in the later stages of the diseases and how it differed in Black and White individuals
4. Tuskegee was chosen for this study because:
- A. It was only 100 miles from the government offices in Atlanta
 - B. It was where the Tuskegee airmen could be used for the experiment
 - C. It had a large Black population and a small hospital that served African Americans
 - D. The local white doctors wanted the population to be used for experiments
5. The study finally ended in 1972 because:
- A. There was public outrage
 - B. The government doctors realized they had done something really wrong
 - C. Black doctors at the Tuskegee Institute in Tuskegee objected to the study
 - D. The researchers had proven their objectives

Answer Key:1- D, 2- B, 3-D, 4-C, 5-A

- 3.) Spark group discussion with the provided discussion questions. (optional: break students up into small groups, assign a question to each group, allow groups to discuss, then have each group share what they discussed).

1. Why was the U.S. Public Health Service's Syphilis Study at Tuskegee unethical? You can learn more about changes made to standard research practices after Tuskegee in [Research Implications](#).
2. The Tuskegee Study continued from 1932-1972 and impacted the lives of 600 hundred low-income African American men. What is the legacy of the Tuskegee study, and how does it impact healthcare today?
3. When treatment is more dangerous, or just as dangerous, as a disease – how can we ensure patients are fully informed and consensual partners in their healthcare decisions?

Answer Key

1. Why was the U.S. Public Health Service's Syphilis Study at Tuskegee unethical?
A: There is no evidence that researchers obtained informed consent from participants, and participants were not offered available treatments, even after penicillin became widely available.
You can learn more about changes made to standard research practices after Tuskegee in [Research Implications](#).
2. The Tuskegee Study continued from 1932-1972 and impacted the lives of 600 hundred low-income African American men. What is the legacy of the Tuskegee study, and how does it impact healthcare today?
A: The legacy of Tuskegee is one of mistrust and the study's methods have become associated with exploitation and mistreatment by the medical community. Today, medical mistrust is still prominent.
3. When treatment is more dangerous, or just as dangerous, as a disease – how can we ensure patients are fully informed and consensual partners in their healthcare decisions?

A: Multifaceted answer-allow students to explain how they think we can ensure patients are fully informed and consensual partners in their healthcare decision. Then, have them read the articles listed under part 4 to further their understanding of this complex topic.

4.) Additional readings and video on informed consent.

- What “Informed Consent” Really Means, click [here](#) to access
- Informed Consent Guidance- How to Prepare a Readable Consent Form, click [here](#) to access
- Informed Consent for Research: What to Expect (video), click [here](#) to access

Activity #2: The U.S Bail System

Type of Activity: Video, Quiz, Discussion, Readings

Competencies Addressed: ES.H.13, ES.H.17, ES.H.18

Estimated Time of Activity: 30 minutes

Supplies Needed: Internet Connection, Video Playing Capabilities, Printer & Ink

Activity Description: Since 2000, the annual number of people convicted of crimes in the United States has stayed steady, but the average number of people in jail each year has shot up. How can that be? The answer lies in the bail system— which isn't doing what it was intended to do. Camilo Ramirez details how the cash bail system disproportionately hurts people in low-income communities and communities of color (Ramirez, n.d)

- 1.) Start by showing the video [‘The problem with the U.S. bail system- Camilo Ramirez’](#) (video length: 6:30)
- 2.) Complete the ‘Think’ questions provided
 1. When is cash bail set during the legal process?
 - A. As an alternative to serving a sentence after you’ve been convicted of a crime
 - B. As a way to get out if you are in prison
 - C. After you've been accused of a crime, but before your day in court
 - D. After you decide not to plead guilty
 2. What is the purpose of cash bail as originally intended?
 - A. To punish you financially for committing a crime
 - B. To create an incentive to return to court until a judge decides the case
 - C. To pay the court back for the legal fees associated with prosecuting a case
 - D. To raise funds for police departments

3. When do you get your cash bail back?
 - A. At the end of your case, whether you are found guilty or innocent, so long as you return for your court dates
 - B. At the end of your case, but only if you are found innocent
 - C. You don't get it back. It is the penalty for getting arrested
 - D. You don't get it back. It is the fee for the court to arbitrate a dispute
4. How is cash bail supposed to be determined?
 - A. It should be based on the likelihood that you are guilty
 - B. It should be based on whether you have a criminal record
 - C. It should be based on the seriousness of the case
 - D. It should be based on how much money you can afford
5. Why is cash bail necessary?
 - A. To send a message that there are consequences if you commit a crime
 - B. To make sure people come back to court as required
 - C. There is no evidence that it's necessary. Data shows that people return to court to resolve their cases without financial incentive
 - D. To keep the courts funded

Answer Key: 1-C, 2-B, 3-A, 4-C, 5-C

3.) Spark group discussion with the provided discussion questions (optional: break students up into small groups, assign a question to each group, allow groups to discuss, then have each group share what they discussed).

1. Who is greatly impacted by the bail system? What communities are the most targeted? Why?

A: The unfair bail system affects low-income communities and people of color the most. This is largely because judges decide if the defendant gets bail-allowing personal bias to affect decisions.

2. What are commercial bail bond companies? Describe the relationship between commercial bail bond companies & the average price of bail in the U.S.

A: Commercial bail bond companies pay the defendant's bail; the defendant then has to pay a large fee to the bail bond company. Commercial bail bond companies grew in popularity as the price of bail increased.

3. What is the main driver of the growth of the U.S. jail system?

A: pre-trial detention

4. Why do you think the current bail system is a public health issue?

A: This is a multi-faceted answer. Allow students to explain why they think the current bail system is a public health issue and then have them read the articles listed under part 7 to further their understanding of this complex topic.

4.) Additional readings on Incarceration and Public Health

- Understanding Mass Incarceration as a Public Health Issue, click [here](#) to access.
- Incarceration- Healthy People 2030, click [here](#) to access.
- Incarceration is a Health Threat. Why Isn't it Monitored like One? Click [here](#) to access.
- Advancing Public Health Interventions to Address the Harms of the Carceral System, click [here](#) to access.

Activity #3: The Relationship Between Neighborhoods & Health Status

Type of Activity: Video, Discussion, Research

Competencies Addressed: ES.H.9, ES.H.13, ES.H.17, ES.H18

Estimated Time of Activity: 50 Minutes (will depend on the video chosen)

Supplies Needed: Wi-Fi, Computer, Handouts, Printer & Ink

Activity Description: Why is your street address such a good predictor of your health? In this activity, students will explore how an individual's environment impacts their overall health and how communities of color and low-income communities face a disproportionate risk of environmental hazards.

- 1.) Start by brainstorming neighborhood features.
 1. This pre-viewing activity will elicit student preconceptions about the connections between neighborhood features and health.
 2. The neighborhoods people live in greatly impact their health and well-being. Ask the class to brainstorm neighborhood features that could positively or negatively impact health.
 3. In small groups or together as a class, they should create a Features Table listing the feature and its potential health effects. Have students try to list at least ten features that influence health directly or indirectly. For example, health benefits associated with local parks are exercise and community interaction.

Neighborhood Features Table



Neighborhood Features (sidewalks, parks, etc.)	Potential Health Impacts (Positive or Negative)

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Neighborhood Features Table
Answer Key

Neighborhood Features	Potential Health Impacts (Positive or Negative)
1. Living near a freeway or a high-traffic road	Negative: Reduced air quality, increased noise, safety
2. Nearby parks	Positive: Promotes exercise, clean air, etc.
3. Plenty of sidewalks	Positive: Safety, promotes exercise, mobility
4. Farmers market	Positive: Easy access to fresh fruits and vegetables
5. Lack of nearby grocery stores	Negative: Limited access to affordable and nutritious foods (food deserts)
6. High crime rates	Negative: Increased stress
7. Living near toxic or dangerous materials	Negative: Contaminated drinking water, increased air pollution
8. Well-designed streets (bike lanes, crosswalks, traffic slowing features).	Positive: Pedestrian safety, mobility
9. Houses with lead (occurs in older homes)	Negative: Lead poisoning in children
10. Public transportation	Positive: Increased accessibility, equitable transportation, saves money

2.) Show any of the below video clips. It is recommended to view each video before showing it to gauge video appropriateness for your specific students. Click on the video titles to view.

-  "Pollution is Segregated" Says the Father of Environmental Justice | Aman...(video length: 17:43)
-  Neighborhood influences on health (video length: 5:10)

To prepare students for thoughtful viewing, ask them to consider the following questions as they watch the films (prepare as a handout or write the questions on the board):

1. When we think about the environment, we usually consider air pollution, water quality, or toxic waste. What other things in our neighborhood environments might also affect our health?
2. What role do public health and healthcare play in ensuring neighborhoods are healthy?
3. What could be done to improve these neighborhoods in the future so they better promote residents' health and well-being?

3.) Have students visit the County Health Rankings & Roadmaps website.

What are County Health Rankings? County Health Rankings & Roadmaps (CHR&R) is a University of Wisconsin Population Health Institute program. The CHR&R program provides data, evidence, guidance, and examples to build awareness of the multiple factors that influence health and support leaders in growing community power to improve health equity. The Rankings are unique in their ability to measure the health of nearly every county in all 50 states and are complemented by guidance, tools, and resources designed to accelerate community learning and action (County Health Rankings, n.d).

To visit the website, click [County Health Rankings](#).

1. Have students explore how healthy their community is. Students can search by State, County, or ZIP code.

2. Ask students to review the Health Factors in their community (clinical care, physical environment, social and economic factors).
3. Have the students compare their county's health to the state, then to the U.S. how does their county compare?
4. Ask students to share their findings. Were they surprised by what they found? Why or why not?

Activity #4: Redlining Louisville: Racial Capitalism and Real Estate

Type of Activity: Research, Discussion

Competencies Addressed: ES.H.13, ES.H.13, ES.H.18

Estimated Time of Activity: 30 Minutes

Supplies Needed: Wi-Fi, Computer

Activity Description: The Office of Redevelopment Strategies of Louisville Metro Government launched an interactive story map that illustrates the modern-day consequences of redlining in Louisville, KY. Redlining, which takes many forms, is most commonly the practice of denying loans in certain neighborhoods because of race or socioeconomic characteristics (Redlining Community Dialogue, n.d.). Students will explore the interactive map and learn how redlining has affected housing development, disinvestment and lending patterns in Louisville since the 1930s.

- 1.) To Begin, direct students to the website “Redlining Community Dialogue” and have volunteers take turns reading the home page summary out loud to the class. Then, give them time to explore each tab and all the interactive map features alone and with their small groups.

To visit the website, click [Redlining Community Dialogue | LouisvilleKY.gov](https://www.louisvilleky.gov/redlining-community-dialogue)

- 2.) Ensure students view the [Louisville Residential Security Map from 1937](#) and view the 1937 Explanation text (located at the bottom of the black left-hand side column on the website)

- 1.) Suggested discussion questions:

1. What feature of the map did you find the most interesting?
2. How may this historic information reflect the current socioeconomic status of some Louisville residents? How might it benefit some and hurt others?

3. What can be done now to restore the areas of Louisville that were negatively affected by redlining in the area?
4. Are you aware of something similar happening in your own community (for students outside of Louisville, KY)?

Additional Websites with Health Equity Topics and Activities

1. **Firearm Deaths Grow, Disparities Widen:** This Centers for Disease Control and Prevention website describes how firearm deaths continue to be a significant growing public health problem in the United States.

<https://www.cdc.gov/vitalsigns/firearm-deaths/index.html>

2. **Health Equity in Healthy People 2030:** The priority area of health equity within Healthy People 2030 aims to address health disparities and promote equal opportunities for health among all individuals, regardless of their backgrounds or circumstances.

<https://health.gov/healthypeople/priority-areas/health-equity-healthy-people-2030>

3. **Office of Health Equity, Kentucky Department for Public Health:** The Kentucky Department for Public Health Office of Health Equity addresses health disparities among racial and ethnic minorities and rural Appalachian populations.

<https://www.chfs.ky.gov/agencies/dph/oc/Pages/heb.aspx>

4. **Office of Minority Health (OMH):** OMH, within the U.S. Department of Health and Human Services, works to improve the health of racial and ethnic minority populations. Their website offers data, programs, and resources for advancing health equity

minorityhealth.hhs.gov

5. **Using a Health Equity Lens:** This Centers for Disease Control and Prevention website describes key healthy equity concepts when framing disparities or inequities.

https://www.cdc.gov/healthcommunication/Health_Equity_Lens.html

Activity Sources

Introduction

American Public Health Association. “*Health equity*”. Available at:
<https://www.apha.org/topics-and-issues/health-equity> (Accessed: May 4, 2023).

Health Equity Video Series | Health Equity | CDC. (2013).
<https://www.cdc.gov/healthequity/whatis/videos/index.html>

Activity #1: The Tuskegee Syphilis Experiment

Reverby, Susan. “Ugly History: The U.S. Syphilis Experiment.” *TED*, TED-Ed,
<https://ed.ted.com/lessons/ugly-history-the-u-s-syphilis-experiment-susan-m-reverby#review>.

Activity #2: The U.S Bail System

Ramirez, C. (n.d.). *The problem with the U.S. Bail System* - . TED. Retrieved May 7, 2023, from
<https://ed.ted.com/lessons/the-problem-with-the-u-s-bail-system-camilo-ramirez>

Activity #3: The Relationship Between Neighborhoods & Health Status

County Health Rankings & Roadmaps. (n.d.). Retrieved May 7, 2023, from
<https://www.countyhealthrankings.org/about-us>

Activity #4: Redlining Louisville: Racial Capitalism and Real Estate

Redlining Community Dialogue. (n.d.). LouisvilleKY.Gov.
<https://louisvilleky.gov/government/redevelopment-strategies/redlining-community-dialogue>



Public Health Careers



Where Can I Work in Public Health?

Public health can be found almost anywhere. These are just a few examples, and there are many other organizations and settings where public health professionals can work. The choice of workplace often depends on the specific career path and area of interest within public health.

1. State and Local Public Health Organizations

Each state has a specific way its public health organizations are organized and how their citizens are served. Types of governance health structures include:

- **Centralized or largely centralized structure:** Local health units are primarily led by employees of the state
- **Decentralized or largely decentralized structure:** Local health units are primarily led by employees of local governments.
- **Mixed structure:** Some local health units are led by employees of the state and some are led by employees of local government. No single structure predominates.
- **Shared or largely shared structure:** Local health units might be led by employees of the state or by employees of local government. If they are led by state employees, the local government has the authority to make fiscal decisions and/or issue public health orders; if they are led by local employees, then the state has authority.

Examples of jobs that are often found at state and local public health agencies include:

- Health Educator
- Community Health Project Coordinator
- Maternal/Child Health Specialist
- State/Local Epidemiologist
- Emergency Preparedness Specialist

On the next page is a state and local health department governance classification map. To learn more about health department governance, visit [CDC - Health Department Sites and Governance - STLT Gateway](#).

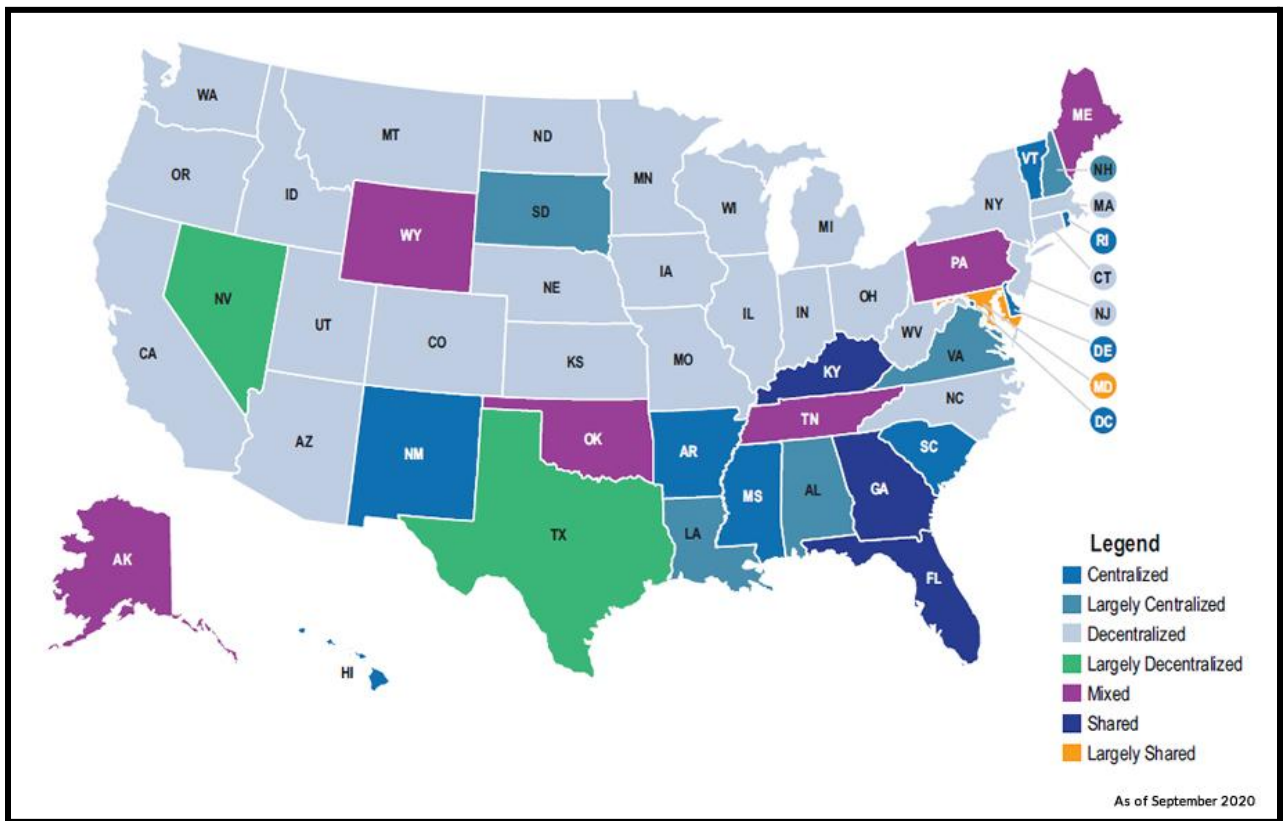


Figure 1. State and Local Health Department Governance Classification Map

2. **Federal Health Agencies**

Federal organizations serve the entirety of the United States and surrounding territories. They are tasked with educating and protecting the health of all U.S. citizens. The Department of Health & Human Services is the primary governmental organization focused on health. The United States Public Health Service Commissioned Corps is one of the eight uniformed services of the United States. Other federal agencies include the Centers for Disease Control & Prevention and the Food and Drug Administration. There are many roles public health professionals can serve in at these organizations. Jobs include:

- Biostatistician
- Health Policy Analyst

- Health Scientist
- Medical Officers

3. Global Public Health Organizations

Global Public Health organizations are tasked with protecting the health of individuals across the globe. The most prominent global health organization responsible for international health is the World Health Organization (WHO). The WHO has 150 offices across the globe and there are many opportunities for public health professionals to get involved. The Peace Corps is also an opportunity for public health professionals interested in global work. Members of the Peace Corps are sent to developing countries to aid in humanitarian work. Job opportunities include:

- Global Health Program Manager
- Epidemiologist
- Public Health Advisor

4. Academia

Colleges and universities employ many public health professionals as well. They serve as faculty and staff and contribute to public health research. Other employment opportunities include university health and health education centers and employee assistance programs. Jobs in academia include:

- Professor of Public Health
- Research Coordinator
- Health Educator

5. Healthcare

There are many opportunities for public health professionals inside of a hospital. A health promotion specialist works directly with a hospital to develop strategies to promote health initiatives and access to resources. Public health nurses focus on injury prevention, health promotion, and health maintenance. Other public health jobs in healthcare include:

- Healthcare Administrator
- Health Educator
- Health Information Management Clerk
- Human Resource Specialist

6. Non-Profit Organizations

The non-profit is a large sector where public health professionals are needed. Non-profits provide an endless list of aid to individuals who require it. Volunteers of America is an example of a non-profit where they address issues like homelessness and substance abuse. A non-profit that serves Kentucky's citizens is New Vista. New Vista provides mental health and substance abuse services across the state. Additional job opportunities at non-profits include:

- Case/Social Worker
- Crisis Intervention Counselor
- Community Health Project Coordinator
- Substance Abuse Counselor

7. Private Organizations

Private organizations also hire public health professionals. Examples of private organizations include Pfizer and Johnson & Johnson. Individuals who are interested in clinical research could benefit from working at these companies.

- Biostatistician
- Epidemiologist
- Principal Investigator
- Research Coordinator
- Public Health Consultant

References

CDC - Health Department Sites and Governance - STLT Gateway. (2022). CDC - Health Department Sites and Governance - STLT Gateway. <https://www.cdc.gov/publichealthgateway/sitesgovernance/index.html#:~:text=Types%20of%20governance%20health%20structures,by%20employees%20of%20local%20governments>.

See Yourself in a Public Health Career. (2021). *STEM at CDC*. Centers for Disease Control and Prevention. <https://www.cdc.gov/stem/careers/index.html>

Public Health Career Resources

The compiled list of public health career resources is designed to assist students and educators in learning about the numerous career opportunities in public health. It offers a collection of websites, organizations and publications that provide information on educational programs and job opportunities within the public health sector. This resource list serves as a valuable tool to navigate the diverse landscape of public health careers.

1. Association of Schools and Programs of Public Health (ASPPH)

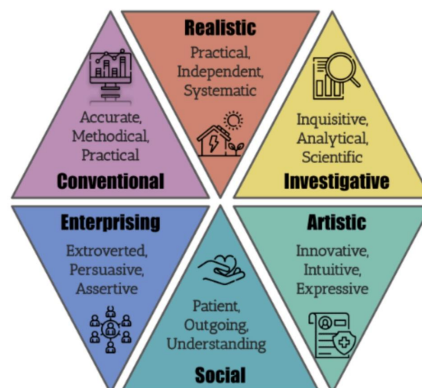
ASPPH's website features a career resources section with valuable information for individuals interested in public health careers. It provides guidance on educational programs, internships, fellowships and job boards, connecting aspiring professionals with resources and networking opportunities.

Link to source: [aspph](http://aspph.org)

2. Choose a Public Health Degree Based on Your Personality Type

PublicHealthDegrees.org provides a web page that matches different public health jobs based on your personality type. For example, if an individual has an investigative personality, a career in epidemiology could be a great fit. This is an excellent resource for someone who would like to pursue a career in public health but is still determining which realm of public health they would like to be a part of.

Link to source: [Choose a Public Health Degree Based on Your Personality](http://PublicHealthDegrees.org)



3. Emory University Rollins School of Public Health: National Public Health Career Postings

Emory University's Rollins School of Public Health published a webpage dedicated to providing jobs in public health on a rolling basis. These postings include jobs from local, state, federal and private organizations. This is an excellent resource for anyone wanting to see what jobs are available for public health professionals.

Link to source: [Public Health Employment Connection - public health jobs and resumes](#)

4. Global Health Careers - Fogarty International Center at the National Institute of Health

This website caters to individuals interested in global health careers. It provides resources on international job opportunities, volunteer programs and fellowships. It also offers information on global health organizations and conferences to facilitate networking and professional growth.

Link to source: [Global Health Careers - Fogarty International Center @ NIH](#)

5. Kentucky Personnel Cabinet

The Kentucky Personnel Cabinet contains many diverse career opportunities across the Commonwealth of Kentucky. The link below will direct you to current opportunities within the Cabinet of Health & Family Services.

Link to source:

<https://kypersonnelcabinet.csod.com/ats/careersite/search.aspx?site=39&c=kypersonnelcabinet>

6. LinkedIn

While not specific to public health, LinkedIn is a valuable resource for networking and job searching in any field. It offers a platform for professionals to connect, join public health-related groups and search for job opportunities posted by organizations and recruiters.

Link to source: <https://www.linkedin.com/>

7. **Occupational Outlook Handbook**

The Occupational Outlook Handbook is a comprehensive resource published by the United States Bureau of Labor Statistics. It provides detailed information about various occupations, including job descriptions, education requirements, salary expectations and employment projections. It is a valuable tool for individuals seeking career guidance and making informed decisions about their future employment prospects.

Link to source: [Home: Occupational Outlook Handbook](#)

8. **Public Health Association Websites**

Many national and regional public health associations have career sections on their websites. Examples include the American Public Health Association (APHA), the Canadian Public Health Association (CPHA) and the European Public Health Association (EUPHA). These websites often feature job boards, career development resources and information on public health events.

Link to sources:

- [American Public Health Association \(APHA\), Public Health CareerMart](#)
- [Canadian Public Health Association \(CPHA\)](#)
- [The European Public Health Association](#)

9. **PublicHealthCareers.Org**

PublicHealthCareers.org was funded and created by the Centers for Disease Control & Prevention (CDC) and the Department of Health and Human Services (HHS). The webpage aims to provide information about public health careers across many different fields. It includes information on public health and how it can be found everywhere. The website breaks down public health careers into categories: epidemiology, administrative roles, public health program manager and many more! It also provides a space to find public health jobs broken down by the user's state or territory.

**It can help users connect with their state's public health department. It is an excellent resource for anyone wanting to pursue a career in public health.

Link to source: [Areas in Public Health](#)

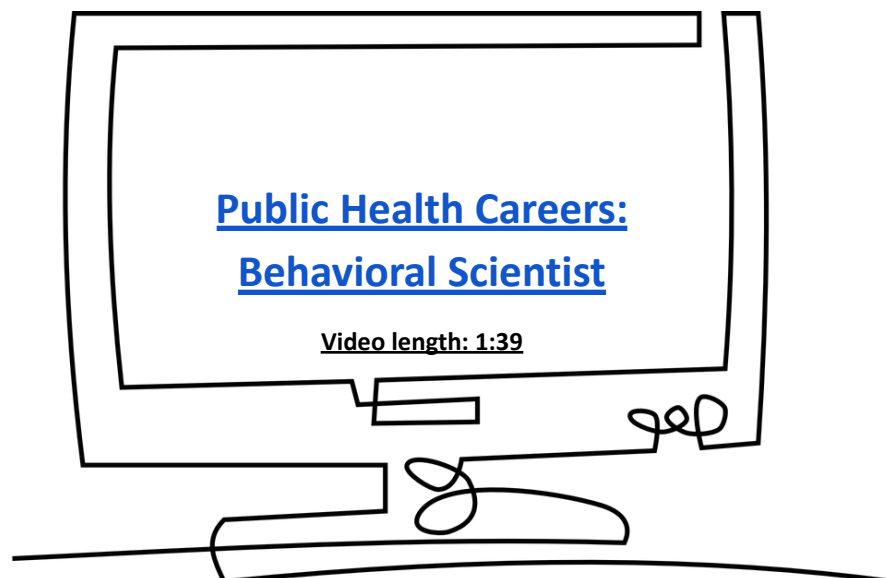
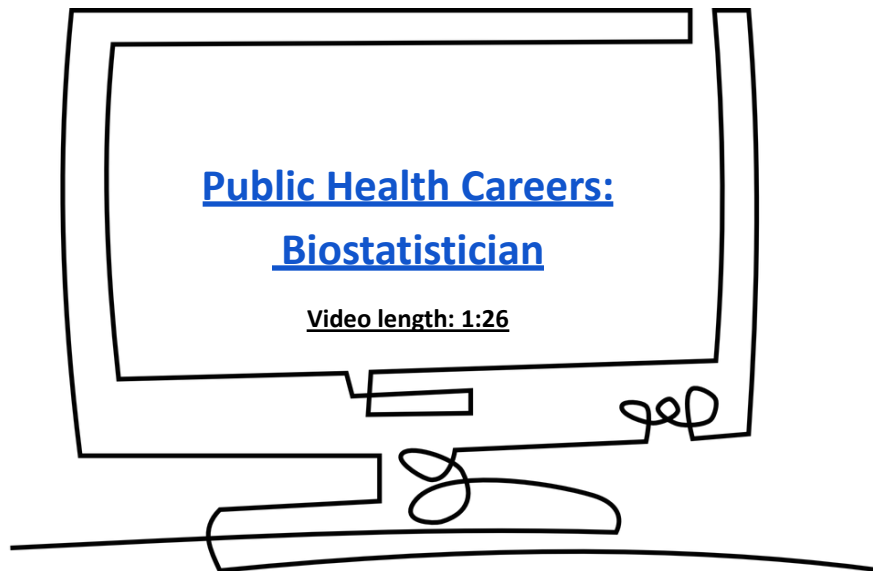
10. Public Health Foundation (PHF)

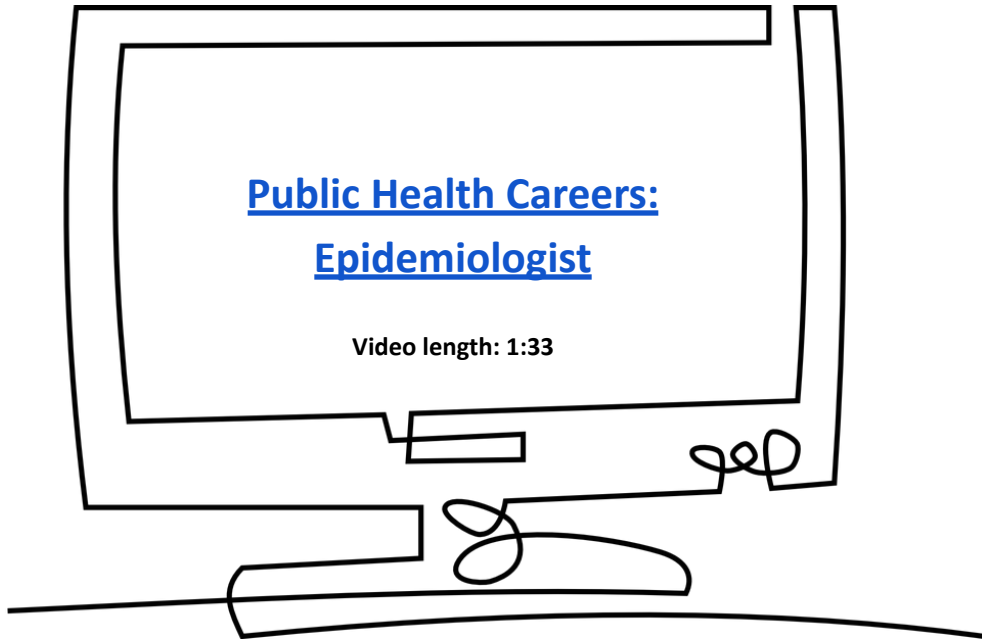
PHF's website hosts a range of resources for public health professionals, including career development tools. It offers webinars, online courses, and publications focused on advancing leadership, program management, and data analysis skills and knowledge.

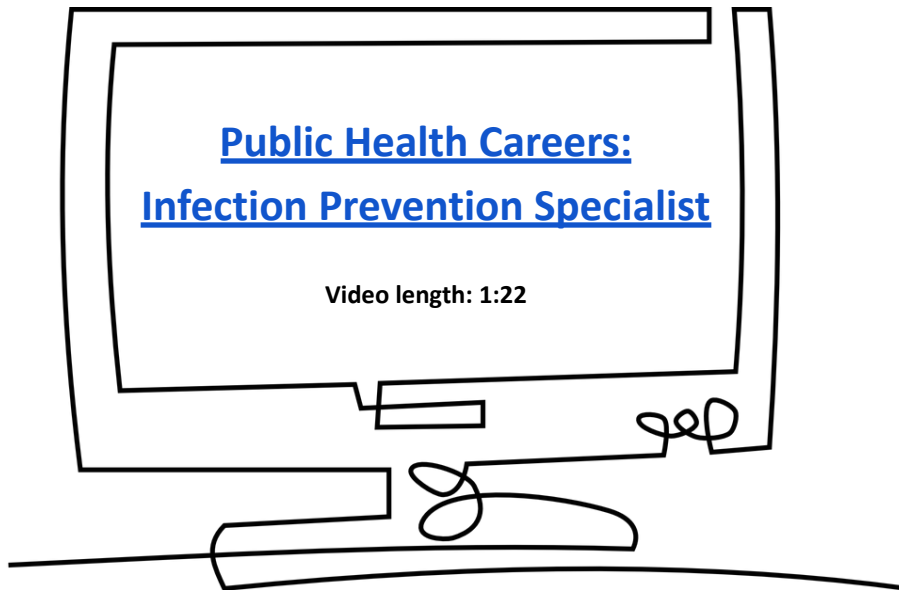
Link to source: [Public Health Foundation](#)

Centers for Disease Control and Prevention Public Health Career Videos

The CDC's Public Health Career Spotlights webpage highlights various public health careers. The videos describe what these professionals do, where they work, what skills they use and what qualifications they need. Click [here](#) to access the webpage or click on the video titles below for direct access.









INTRODUCTION TO **BIOSTATISTICS**

What is Biostatistics?



Biostatistics is a branch of statistics that interprets scientific data generated in the public health sphere. The overall goal of biostatistics is to examine and explore the data received and make valid inferences that will be useful in solving public health problems. Statistical methods are applied when conducting research in areas such as public health, biology and medicine.

Biostatistics has contributed to the understanding of several public health issues, such as:

- Chronic diseases
- Environmental Health
- Cancer
- AIDS
- Human growth and development

Role of Biostatisticians:

- Experts in data evaluation
- Translate complex, mathematical findings from clinical trials into meaningful information that can be used to make public health decisions
- Design and conduct experiments associated with health, safety and emergency management
- Collect and analyze data to improve public health programs
- Identify problems and solutions within the public health sector
- Interpret the results of their findings

Academic Pathways

Biostatisticians often complete their undergraduate degree in math or biology. A master's degree is usually a minimum requirement for many clinical, academic and governmental research positions. Many professionals in biostatistics decide to pursue graduate work by completing their Master of Public Health (MPH) or Master of Science degree.

- Many public health schools offer concentrations in biostatistics

Careers

- Biostatistician at the Centers for Disease Control and Prevention (CDC)
- Biostatistician at a leading biotechnology company
- Statistical analyst in the health insurance industry
- Surveillance program administrator in a state health department
- Senior consulting research statistician at a university
- Biostatistician in the pharmaceutical industry
- And many more!



ADDITIONAL **RESOURCES**

*Click on the items below to visit its corresponding links

Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Kentucky Graduate Schools

- [University of Louisville - Online Master of Science in Biostatistics](#)
- [25 Best Biostatistics MPH Programs](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.

Source: 1. <https://www.publichealthcareeredu.org/biostatistics-and-informatics/>
2. <https://cph.osu.edu/biostatistics/careers>

INTRODUCTION TO EMERGENCY PREPAREDNESS AND RESPONSE



WHAT IS IT?

- A professional in this field oversees emergency planning and processes to reduce health risks during urgent situations, such as natural disasters, disease outbreaks, terrorist attacks and other situations.
- Emergency preparedness and response involves a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action.

ACADEMIC REQUIREMENTS

- Most Emergency Preparedness and Response careers require some type of bachelor's degree.
- Some possible degree pathways include public health, public administration and emergency management.
- Some professionals may go on to get a Master's degree in one of the above areas.
- It may also be useful to obtain educational training in information technology, computer science and accounting.

ROLES AND RESPONSIBILITIES

- Work with community organizations as well as law enforcement to predict possible emergency scenarios and plan responses.
- Look to reduce panic and harm among populations impacted by an emergency.
- Train organization employees in emergency response procedures.
- Responds to emergency situations to monitor for health and medical needs requests and assist local jurisdictions with gaps.
- After an emergency occurs, these professionals analyze current data and adapt to further reduce population risks.

CAREERS

- Emergency Response Specialist
- Disease Preparedness Researcher
- Emergency Management Specialist
- Public Health Specialist
- Public Information Officer
- Nurse Consultant



Click on the items below to visit their corresponding link.

Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Industry Websites

- [Federal Emergency Management Agency \(FEMA\)](#)
- [Kentucky Department for Public Health - Public Health Preparedness Program](#)
- [Kentucky Emergency Management](#)
- [National Institute for Occupational Safety and Health \(NIOSH\) - Emergency Preparedness and Response Program](#)
- [U.S. Department of Homeland Security](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.

Introduction to Environmental Health

What is it?

Environmental Health Involves studying manmade and natural factors that contribute to our own health and communities' health. Environmental health scientists study these factors and how they positively and negatively contribute to the health of an environment, and how they impact the people that live within that environment.

Roles and Responsibilities

- Work to find creative solutions to environmental risk factors through research, educational offerings and policy implementation.
- Address environmental issues using cost-effective, sustainable strategies that support public health.
- Translate results of environmental health research into useful actions and public health interventions at local, state, national and global levels.

Careers

Environmental health careers may be primarily field-based or involve policy work, legislation or other areas of environmental protection and regulation

1. Environmental Health Specialists
2. Environmental Health Technicians
3. Public Health Safety Officers/Environmental Health Inspectors
4. Public Health/Environmental Engineer

Academic Requirements

- Bachelor's degree in environmental health, biology, chemistry, or other related natural sciences or 24 semester hours in environmental health, biological science or physical science..
- A common approach for environmental health professionals at the graduate level is to pursue a Master of Public Health (MPH) in Environmental Health.
- Graduate degrees usually include study in a specialized area of environmental science, such as environmental policy, microbiology, epidemiology, or food science.

Additional Resources

Click on the items below to visit it's corresponding link.

Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Industry Websites

- [Association of Food and Drug Officials \(AFDO\)](#)
- [Association of Food and Drug Officials of the Southern States \(AFDOSS\)](#)
- [Environmental Health - World Health Organization \(WHO\)](#)
- [Kentucky Department for Public Health's Environmental Management Branch](#)
- [National Center for Environmental Health \(NCEH\)](#)
- [National Environmental Health Association \(NEHA\)](#)
- [U.S. Environmental Protection Agency](#)
- [U.S. Food and Drug Administration \(FDA\)](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.



Disease Detectives

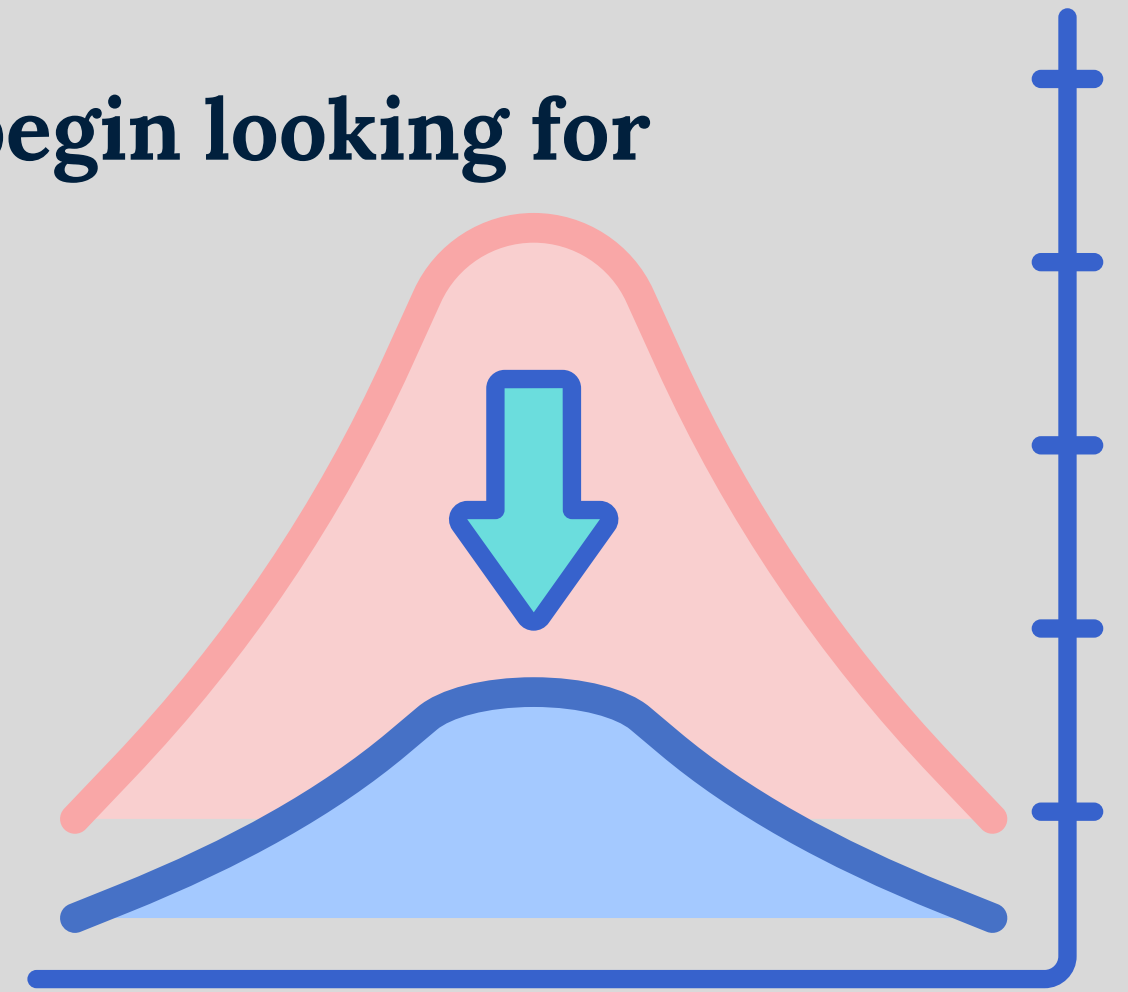
Introduction to Epidemiology

Epidemiology is the method used to find the causes of diseases and health outcomes in populations.

What do Epidemiologists do?

Like investigators at a crime scene, epidemiologists begin looking for clues. They collect information such as;¹

- Who is sick and who isn't sick?
- What are their symptoms?
- When did they get sick?
- What kinds of things were they exposed to?
- Where could they have been exposed?



Epidemiologists study answers to these questions with statistics to determine what the actual risks are. They then use this information to make recommendations on ways to control the spread or prevent future occurrences.²

Academic Pathway



- Epidemiologists can earn a bachelor's, master's, or doctoral degree
- Generally, a master's degree in public health (MPH) helps to make a career in epidemiology
- Many individuals with clinical degrees (e.g., medicine, veterinarian, dental) and an MPH go on to careers in public health

Careers

- Epidemiologist at a local or state health department
- Epidemiologist at a hospital
- Veterinary Epidemiologist
- Teaching or research at a university
- Scientific research in private industry (e.g., pharmaceuticals)



Additional Resources

Click on the items below to visit it's corresponding link.

Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Industry Websites

- [About Covid-19 Epidemiology - Center for Disease Control and Prevention](#)
- [Kentucky Department for Public Health's Division of Epidemiology and Health Planning](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.

INTRODUCTION TO GLOBAL HEALTH



Kentucky Public Health
Prevent. Promote. Protect.



What is it?

- The goal of global health is to improve public health and strengthen U.S. national security through global disease detection, response, prevention, and control strategies.
- Global health efforts in the U.S. help to:
 - Promote health around the world
 - Prevent the international spread of disease
 - Protect the health of the U.S. population



Roles and Responsibilities

- Global health impacts everyone. Therefore, global health professionals are directly responsible for the study and practice of population-level health interventions around the world.
- Focus on health within all countries, across borders, boundaries, and all socioeconomic statuses. Focus on health issues that transcend boundaries and that are important both domestically and internationally.
- Study large-scale epidemics, vaccines, treatments and other strategies for mitigating the spread of diseases.
- Collaborate with community leaders, relief organizations, governmental agencies and other groups to promote medical awareness and global health.
- Craft policies that help prepare for disease outbreaks
- Oversees programs that educate communities about effective treatment for diseases.



Academic Requirements

- Those interested in pursuing a career in global health often pursue undergraduate degrees in social sciences, public health, or in the allied health fields.
- The most widely held graduate degree among global health professionals is the Master of Public Health (MPH) with a concentration in global health.

Careers



- Public health professionals within the field of global health work for U.S. government agencies, public health agencies, nonprofit organizations, advocacy groups, academic institutions, and private businesses.
 - International non-governmental Aid Workers
 - Global Infectious Disease Analysts
 - HIV/AIDS Research Associates
 - Public Health Advisor
 - Epidemiologist
 - Health Scientist

Additional Resources

Click on the items below to visit it's corresponding link.

Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Industry Websites

- [Organization of the CDC Center for Global Health](#)
- [U.S. Agency for International Development](#)
- [World Health Organization](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.

Source: 1. <https://www.publichealthcareeredu.org/global-health/>

Introduction to Maternal and Child Health



What is it?

Maternal and Child Health focuses on improving the well-being of mothers, infants and children. Their well-being determines the next generation's health and can impact future public health challenges for families, communities and the health care system.

Roles and Responsibilities

- Support newborn screening, vaccination care and prenatal care programs.
- Promote, identify and teach behavioral, social and healthy habits.
- Provide methods of healthy family planning.
- Create policy change through advocacy.
- Providing community public health education.

Academic Requirements

- Studies focus on women and children's developmental, mental, social and behavioral health.
- Learn how to improve physical and mental health by examining demographics, environmental, educational and socioeconomic effects on women, infants and children.
- Those interested in pursuing a career in maternal and child health often pursue a bachelor's degree in public health.
 - Specializations for this degree program may focus on maternal and child health or a more inclusive focus such as health planning or family health.
 - Many maternal and child health professionals also hold a Master's of Public Health.
 - Students get a more concentrated focus on the health needs of individuals within this group, providing a solid foundation for careers that center around the health of families.

Careers

- Social and community service managers
- Health educator
- Community health worker
- Nutritionists
- Dieticians
- Substance abuse, mental health and behavioral disorder counselors



Additional Resources

Click on the items below to visit it's corresponding links



Kentucky Undergraduate Schools

- [Eastern Kentucky University Admissions](#)
- [University of Kentucky Undergraduate Admissions](#)
- [University of Louisville Undergraduate Admissions](#)
- [Western Kentucky University Admissions](#)

Industry Websites

- [Administration for Children and Families \(DHHS\)](#)
- [Anne E. Casey Foundation](#)
- [Association of Maternal and Child Health Programs](#)
- [Division of Maternal and Child Health](#)

Note: The schools listed are in partnership with C4FH. Public Health education opportunities may be available at other colleges and universities.

Source: 1. <https://www.publichealthdegrees.org/specializations/maternal-child-health/#what-is-maternal-and-child-health>
2. <https://www.mphonline.org/job-description-mch-specialist/>

Activity #1: Public Health Career Exploration Assignment

Type of Activity: Research project and presentation

Academic Standards Addressed: C.H.1, C.H.7, C.H.8

Estimated Time of Activity: At least three 45-minute class periods (size of class may require additional time)

Supplies Needed: PowerPoint, computer, internet

Activity Description: This assignment aims to familiarize students with various career options in the field of public health. Students will conduct research on a specific public health career, gather relevant information, and present their findings to the class.

Instructions:

1. **Career selection:** Each student will choose one public health career to research and present. Have students select one of the public health careers listed below:
 - Biostatistician
 - Community Health Worker
 - Emergency Response Specialist
 - Environmentalist
 - Epidemiologist
 - Global Disease Analyst
 - Health Program Coordinator
 - Healthcare Consultant
 - Healthcare Policy Analyst
 - Hospital Administrator
 - Maternal and Child Health Specialist
 - Occupational Health and Safety Specialist
 - Primary Research Investigator
 - Public Health Educator
 - Public Health Information Officer
 - Public Health Laboratory Scientist
 - Public Health Nurse
 - Public Health Physician

- Social Worker
- Vaccine Researcher

2. Research: Have students research the following topics for their selected career:

1. Explore the educational requirements, job responsibilities and required skills for the chosen career.
2. Identify key organizations, agencies or institutions that employ professionals in this field.
3. Investigate current trends, challenges and opportunities within the chosen career path.
4. Gather data on salary ranges, job outlook and potential growth in the field.

Resource List: The following websites can be used to assist with research. Please note, the below list is not comprehensive, and other peer-reviewed or reputable websites (.Gov, .Edu, .Org) can be used.

- U.S. Bureau of Labor Statistics-<https://www.bls.gov/ooh/>
- PublicHealth.org-<https://www.publichealth.org/careers/>
- Centers for Disease Control and
Prevention-<https://www.cdc.gov/stem/careers/index.html>
- Public Health Online-<https://www.publichealthonline.org/careers/>
- American Public Health Association-<https://www.apha.org/>

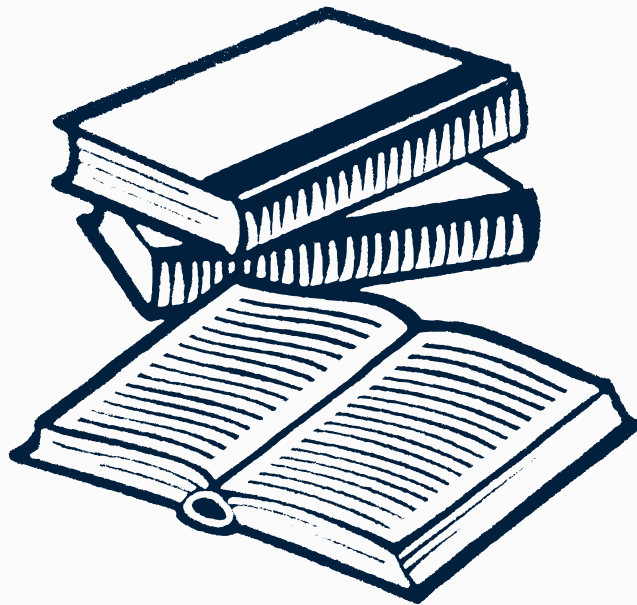
3. Presentation: Create a slideshow presentation (either PowerPoint, Google Slides, Prezi, etc.) and present your findings to the class. Make sure to add an additional slide with the sources you used to create your slideshow.

4. Scoring Rubric for Public Health Career Exploration Presentation: The below rubric can be used to evaluate student presentations. Note: Assign points to each rating. For example, Excellent = 10, Good = 8.

Criteria	Excellent	Good	Fair	Poor	Comments
Public Health Career Topic	Selected a public health career	N/A	N/A	Did not select a public health career	
Presentation Content	The presentation effectively and thoroughly explores the selected public health career.	The presentation adequately explores the selected public health career.	The presentation provides a basic overview of the selected public health career.	The presentation lacks a clear understanding of the selected public health career.	
Organization	The presentation is well-structured, with a clear introduction, body, and conclusion. Ideas are presented logically, and transitions between topics are smooth.	The presentation is mostly well-structured, with an introduction, body, and conclusion. Ideas are presented logically, but transitions between topics may be slightly abrupt or disjointed.	The presentation lacks some organization and may have an unclear or weak introduction, body, or conclusion. Transitions between topics are inconsistent or confusing.	The presentation lacks organization and does not have a clear introduction, body, or conclusion. Transitions between topics are unclear or absent.	
Delivery	Demonstrates excellent verbal and non-verbal skills. They speak clearly and confidently, maintaining a suitable pace and volume. Eye contact is made with the audience.	Demonstrates good verbal and non-verbal skills. They speak clearly and confidently, maintaining a suitable pace and volume. Eye contact is mostly made with the audience,	Verbal and non-verbal skills need improvement. They may speak too quickly, softly or unclearly. Eye contact with the audience is minimal.	The presenter does not have effective verbal and nonverbal skills. They speak too quickly, softly, or unclearly.. There is no eye contact with the audience.	
Resources	Provided accurate and reliable sources after the slideshow presentation	N/A	N/A	Did not provide accurate and reliable sources for a slideshow presentation	
					Total

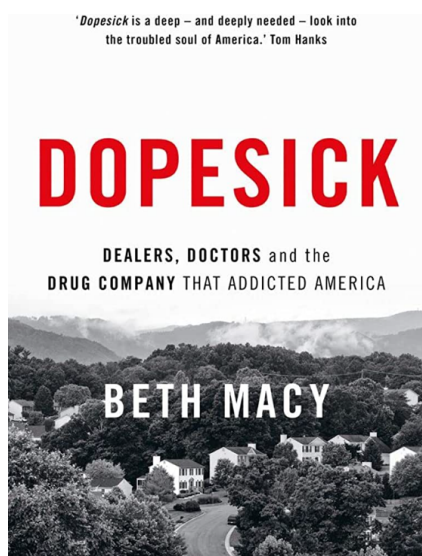


Books



Public Health Books

The following book list delves into the world of public health, offering diverse perspectives on pressing issues that impact global populations. From groundbreaking research to compelling narratives, these books shed light on the challenges, triumphs and complexities of safeguarding and improving the health of communities worldwide. Note: Before assigning to students, please determine the appropriateness of the content.



Dopesick: Dealers, Doctors, and the Drug Company that Addicted America by Beth Macy

Beth Macy takes us into the epicenter of a national drama that has unfolded over two decades. From the labs and marketing departments of big pharma to local doctor's offices; wealthy suburbs to small distressed communities in Central Appalachia; from distant cities to once-idyllic farm towns; the spread of opioid addiction follows a tortuous trajectory that illustrates how this crisis has persisted for so long and become so firmly entrenched in our society.

Synopsis from [Dopesick by Beth Macy | 9780316551281 | Hachette Book Group](#)



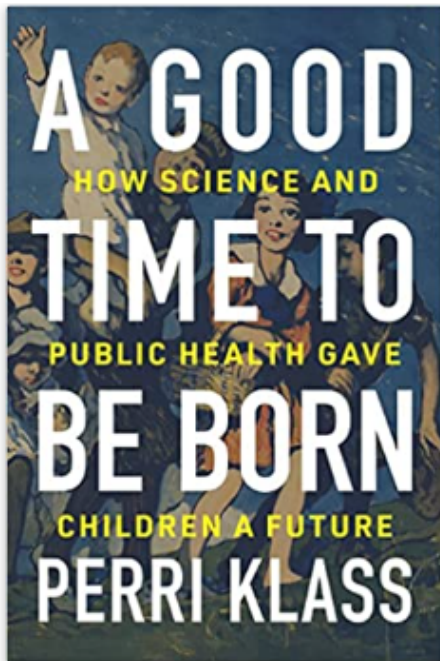
Five Days at Memorial: By Sheri Fink

After Katrina struck and the floodwaters rose, the power failed, and the heat climbed, exhausted caregivers chose to designate certain patients last for rescue. Months later, several caregivers faced criminal allegations that they deliberately injected numerous patients with drugs to hasten their deaths.

Five Days at Memorial, the culmination of six years of reporting, unspools the mystery of what happened in those days, bringing the reader into a

hospital fighting for its life and into a conversation about the most terrifying form of health care rationing.

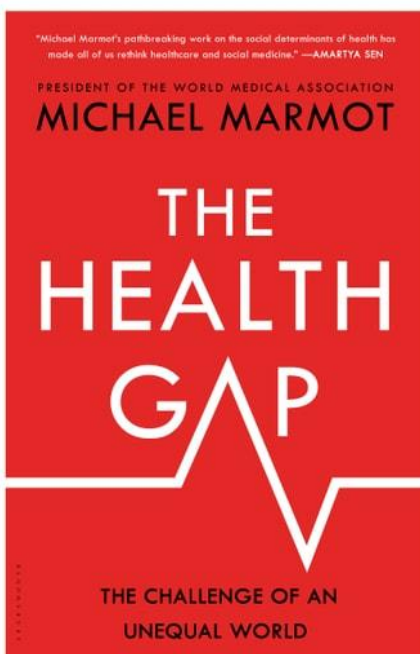
Synopsis from: [Five Days at Memorial: Life and Death in a Storm-Ravaged Hospital.](#)



A Good Time to Be Born: How Science and Public Health Gave Children a Future: By Perri Klass

Only one hundred years ago, in even the world's wealthiest nations, children died in great numbers of diarrhea, diphtheria and measles, of scarlet fever and tuberculosis. The steady beating back of infant and child mortality is one of our greatest human achievements. Interweaving her own experiences as a medical student and doctor, Perri Klass pays tribute to groundbreaking women doctors like Rebecca Lee Crumpler, Mary Putnam Jacobi, and the nurses, public health advocates and scientists who brought new approaches and scientific ideas about sanitation and vaccination to families.

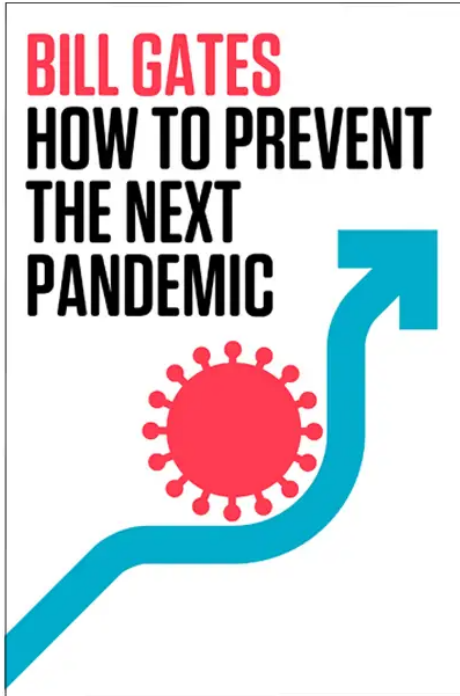
Synopsis from: [A Good Time to Be Born: How Science and Public Health Gave Children a Future: Klass, Perri: 9780393609998](#)



The Health Gap: The Challenge of an Unequal World by: Michael Marmot

In this groundbreaking book, Michael Marmot, president of the World Medical Association, reveals social injustice as the greatest threat to global health. The Health Gap deals with inequalities between and within countries and dives into what causes these differences and what could be the key to fixing them.

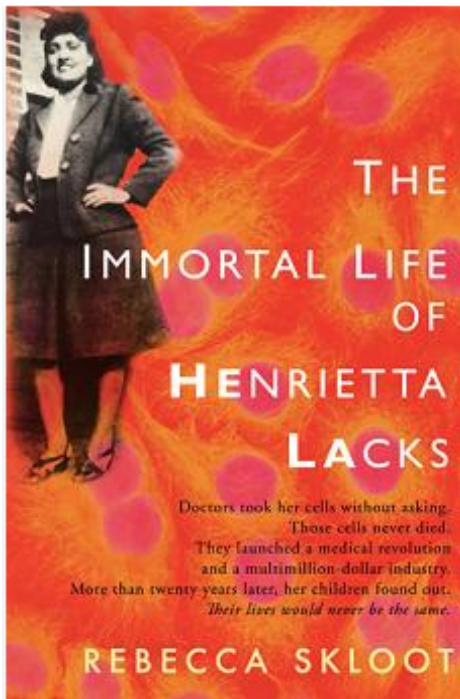
Synopsis from: [The Health Gap: The Challenge of an Unequal World: the argument - PMC.](#)



How to Prevent the Next Pandemic by Bill Gates

In this book, he clearly and convincingly explains what the world should have learned from COVID-19 and what we can do to prevent another disaster like it. Relying on the shared knowledge of the world's foremost experts and on his own experience of combating fatal diseases through the Gates Foundation, he first helps us understand the science of infectious diseases. Then he shows us how the world's nations, working in conjunction with one another *and* the private sector, can prevent a new pandemic from killing millions of people.

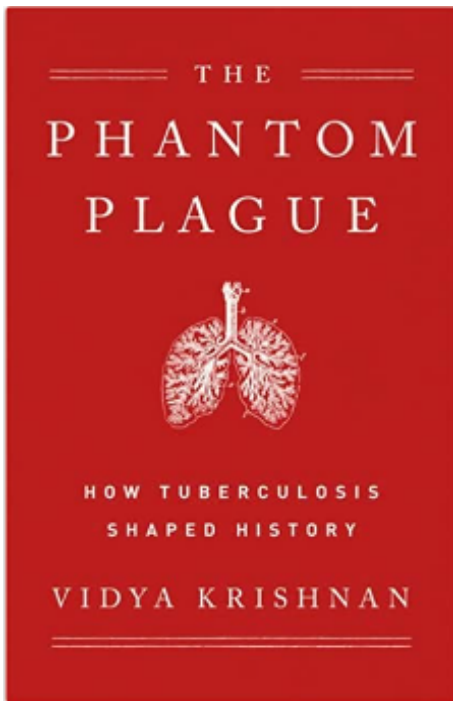
Synopsis from: [How to Prevent the Next Pandemic: Gates, Bill: 9780593534489: Amazon.com: Books](https://www.amazon.com/How-to-Prevent-the-Next-Pandemic-Gates-Bill/dp/9780593534489)



The Immortal Life of Henrietta Lacks by Rebecca Skloot

How one woman's DNA has lived forever. Written by science author Rebecca Skloot, *The Immortal Life Of Henrietta Lacks* (2011) investigates the intersection of racism and inequality in the medical community. Henrietta Lacks was a poor, Black tobacco farmer from the Southern US-- but the medical community knows her as HeLa (pronounced hee-lah). This is the story of Henrietta and her cells-- which were harvested without her consent-- and their immortal impact on the future of science and medicine.

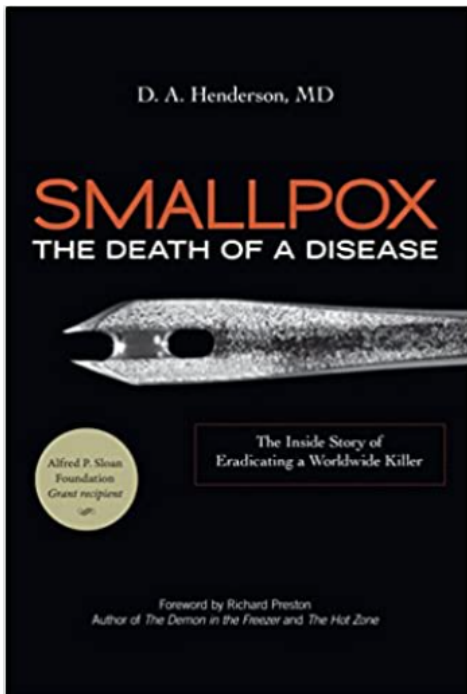
Synopsis from [Summary of The Immortal Life Of Henrietta Lacks by Rebecca Skloot](https://www.summaryofbooks.com/summary-of-the-immortal-life-of-henrietta-lacks-by-rebecca-skloot/)



Phantom Plague by Vidya Krishnan

In *Phantom Plague*, Vidya Krishnan traces the history of tuberculosis from the slums of 19th-century New York to modern Mumbai. In a century-long narrative, Krishnan shows how superstition and folk remedies made way for scientific understanding of TB, such that it was controlled and cured in the West.

Synopsis from: [The Phantom Plague: How Tuberculosis Shaped History](#)



Smallpox: The Death of a Disease - The Inside Story of Eradicating a Worldwide Killer by D.A. Henderson, MD

For more than 3,000 years, hundreds of millions of people have died or been left permanently scarred or blind by the relentless, incurable disease called smallpox. In 1967, Dr. D.A. Henderson became director of a worldwide campaign to eliminate this disease from the face of the earth. This book is Dr. Henderson's personal story of how he led the World Health Organization's campaign to eradicate smallpox—the only disease in history to have been deliberately eliminated. Some have called this feat "the greatest scientific and humanitarian achievement of the past century."

Synopsis from: [Smallpox: The Death of a Disease - The Inside Story of Eradicating a Worldwide Killer: D. A. Henderson, Richard Preston: 9781591027225: Amazon.com: Books](#)

BETH SELTZER

SECOND EDITION

101+

CAREERS IN
PUBLIC
HEALTH



SPRINGER PUBLISHING COMPANY

APHA PRESS
OFFICE OF AMERICAN PUBLIC HEALTH ASSOCIATION

101+ Careers in Public Health by: Beth Seltzer

101+ Careers in Public Health provides an overview of the vast options of public health careers that exist today. It is a great read for anyone considering a career in public health but still deciding the direction they would like to head in. A wide range of public health topics are covered in the book, including epidemiology, environmental health, public safety, public health nursing, and a myriad of other career options.

Synopsis from: [101+ Careers in Public Health](#)



Movies/Videos



Public Health Films and Documentaries

This collection of fiction and documentary films delves into the intersection of cinema and public health, offering a visual journey that brings to life the triumphs, struggles and dilemmas faced in pursuing population well-being. These films provide a lens through which to examine the multifaceted world of public health, fostering a deeper understanding and sparking meaningful conversations about the critical issues that impact us all. Please note: Before assigning to students, please determine the appropriateness of the content.



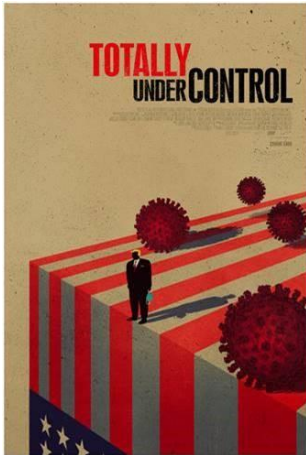
Contagion (2011) Rated: PG-13

Contagion is a medical thriller showcasing a society that faces a lethal pandemic. It features Gwyneth Paltrow and Matt Damon as they navigate through a modern pandemic. The film features governmental organizations, like the Centers for Disease Control and Prevention, as they seek to find a cure for the novel virus. Although this movie was filmed in 2011, some parts truly depict what our world experienced in 2020 with the start of the Covid-19 pandemic, just to a greater extent. Contagion can be found on Amazon and Google Play. Public health topics include epidemiology, population health and mass communication. (Synopsis: [IMDB](#))



Fed Up (2014) Rated: PG

Fed Up is a documentary focusing on the obesity epidemic that the United States faces today. It discusses what led to the rise of obesity and ways public health professionals are trying to address this problem. The documentary mainly focuses on sugar consumption and “Big Sugar’s” influence on the food industry. Fed Up can be found on Youtube. Public health topics include obesity prevention and lobbying influences on public health policy. (Synopsis: [IMDB](#))



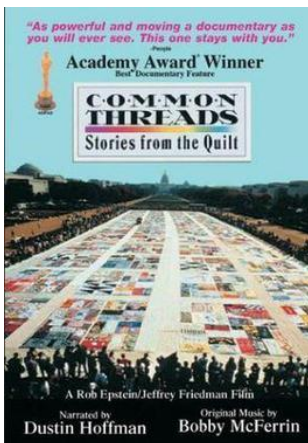
Totally Under Control (2020)

Totally Under Control is a documentary comparing the United States' early handling of COVID-19 to other countries like South Korea. Both of these countries discovered their first case of COVID-19 on the same day. However, the number of lives lost between the two countries greatly differs. The documentary dives into how the COVID-19 pandemic turned into a predominantly political fight rather than a public health issue. It discusses how political leadership can determine the outcome of a pandemic. Totally Under Control can be found on Hulu, Amazon and Youtube. Public health topics include epidemiology, population health, and mass communication. (Synopsis: [IMDB](#))



Before the Flood (2016) Rated: PG

Before the Flood is a documentary that follows popular actor Leonardo DiCaprio through a three-year journey of meeting with scientists, activists, and world leaders to discuss the threat of climate change. DiCaprio travels around the world learning about what contributes to the rise of global temperatures and what different cultures are doing to combat climate change. It includes interviews with Barack Obama, Elon Musk, and Piers Seller, a NASA astronaut. Before the Flood can be found on Disney+ and Amazon. Public health topics include environmental health, climate change and global health. (Synopsis: [IMDB](#))



Common Threads: Stories From the Quilt (1989)

Common Threads was one of the first documentaries published about the HIV/AIDS crisis. In the late 1980s, individuals with family members who passed away from AIDS each added a panel to a large memorial quilt. The documentary highlights six of these individuals and their journey through the AIDS crisis. The documentary's director does a phenomenal job showing the context of how the government handled the epidemic. Common Threads can be found on Google Play, Amazon and Apple TV. Public health topics include HIV/AIDS, health policy and stigma. (Source: [IMDB](#))



Recovery Boys (2018)

One of the largest public health issues facing the United States right now is the opioid epidemic. Recovery Boys documents the lives of four young men admitted to opioid abuse treatment in a rural county. It follows the individuals from admittance throughout treatment and dives into their trials and tribulations as they navigate the new chapter of their lives. It gives a first-hand perspective of an individual battling opioid abuse. Recovery Boys is a Netflix original documentary. Public health topics include the opioid epidemic and treatment. (Synopsis: [IMDB](#))



Sicko (2007) Rating: PG-13

Sicko follows director Michael Moore through the navigation of the health insurance industry. He attempts to learn why the United States spends the most per capita on healthcare while most citizens do not have coverage. He visits multiple countries that offer free healthcare, like Canada, the United Kingdom and France. The documentary includes interviews with ordinary U.S. citizens struggling to have their medical treatments covered. Sicko can be found on Youtube for free. Public health topics include healthcare systems, health insurance and health policy. (Synopsis: [IMDB](#))



Chasing Ice (2012)

Chasing Ice is a documentary that showcases climate change and global warming through research on melting glaciers. It follows two filmmakers who spend two weeks in a tent on the Jakobshavn Glacier in Greenland. Their work captures the rapid warming of the earth's climate and its impact on health. Chasing Ice can be found on Google Play, Apple TV and Amazon. Public health topics include climate change, environmental health and global health. (Synopsis: [IMDB](#))



Addiction Incorporated (2011)

Addiction Incorporated documents Victor DeNoble's journey through the Tobacco industry. DeNoble was a drug researcher with a tobacco company and discovered the harmful addictive chemical in cigarettes. This kickstarted DeNoble's lifetime dedication to fighting "Big Tobacco" and helping save the lives of millions. DeNoble's work leads to the first-ever federal regulation on tobacco. Addiction Incorporated can be found on Pluto TV and Tubi for free. Public health topics include tobacco and health policy. (Synopsis: [IMDB](#))



Miss Ever's Boys (1997) Rated: PG

Miss Ever's Boys is a drama based on true events. It follows nurse Eunice Ever through her journey as a nurse during the Tuskegee syphilis trials on the African American population in rural Alabama. The film ends with Ms. Ever's testifying in front of Congress, discussing what truly happened in Tuskegee. Miss Ever's Boys can be found on Hulu, Amazon Prime and Youtube TV. Public health topics include research ethics, sexual health and racial equity. (Synopsis: [IMDB](#))