

# Public Health: An Introduction

## Course

Health Science

## Unit VIII

Strategies for the Prevention of Diseases

## Essential Question

How does the field of public health address wellness & disease in populations?

## TEKS

130.204. (c)  
6 A

## Prior Student Learning

Health careers

## Estimated time

5-6 hours

## Rationale

A generation ago, most colleges did not offer courses in public and global health. Nowadays, these high-draw courses are offered on many campuses and appeal to students who recognize that our global society has a profound affect on health and disease.

## Objectives

Upon completion of this lesson, the student will be able to:

- define public health;
- identify the core areas that comprise public health;
- explain the responsibilities of each core area in public health;
- list improvements in populations due to public health;
- discuss and analyze public health's ethical principles;
- explain how public health professionals tracked and identified the AIDS virus; and
- discuss the importance of team work in public health.

## Engage

As a class, discuss the following:

...in response to the AIDS outbreak and the response of government and public health:

"This is not a political issue. This is a health issue. This is not a gay issue. This is a human issue. And I do not intend to be defeated by it. I came here today in the hope that my epitaph would not read that I died of red tape."

~Roger Gail Lyon (from the HBO movie "And the Band Played On")

## Key Points

### I. What is Public Health?

- A. field of science responsible for improving health and preventing disease in *populations* (specific communities)
- B. Unlike clinical medicine, which focuses on individual health, public health focuses on protecting the health of entire populations.
  1. populations can be as small as a neighborhood or as big as an entire town, state, or country

### II. Public health professionals

- A. examine and investigate *health events* (any occurrences that affect wellbeing of people) that may occur due to:
  1. disease/conditions (acute, chronic, latent, genetic)
  2. accidents and injuries

- 3. mental health conditions
- 4. personal lifestyle choices
- 5. environmental exposures
- B. promote healthy lifestyles and prevent health-related problems from happening or re-occurring
- C. implementing educational programs, developing policies, administering services, and conducting research
- D. work at limiting health disparities (equity, quality, and accessibility)
- III. Field of public health encompasses many core areas
  - A. Environmental Health
  - B. Biostatistics
  - C. Behavioral Science/Health Education
  - D. Epidemiology
  - E. Health Services Administration/Management
  - F. Maternal And Child Health
  - G. Nutrition
  - H. Public Health Laboratory Practice
  - I. Public Health Policy
  - J. Global Health (International Health)
- IV. **Environmental Health**
  - A. concerned with environmental risk factors that can cause disease
  - B. environmental health areas of concern:
    - 1. air quality
    - 2. food protection
    - 3. radiation protection
    - 4. solid waste management
    - 5. hazardous waste management
    - 6. water quality
    - 7. noise control
    - 8. environmental control of recreational areas
    - 9. housing quality
    - 10. vector control
- V. **Biostatistics** - uses math and science to identify and predict health trends
- VI. **Behavioral Science / Health Education**
  - A. focuses on healthy-choice behaviors
  - B. includes community-wide education programs promoting healthy lifestyles to raise disease/injury prevention awareness
  - C. career concentrations include: mental health, behavioral/lifestyle change, public health education, social research of behavior and health
- VII. **Epidemiology**
  - A. investigates disease outbreaks
  - B. participates in fieldwork around the world to determine:

1. causes of diseases/injury
  2. risks of specified diseases or injuries
  3. which populations are at risk for specific diseases/injuries
  4. methods to prevent further health incidents
- C. biostatistics are often used in conjunction with epidemiology to predict and track disease trends
- VIII. **Health Services Administration / Management**
- A. combines business and science in the managing of human and monetary resources needed to deliver effective public health services
  - B. specializes in planning and organization of policies; responsible for analysis, finance, economics, and marketing of health services
- IX. **Maternal and Child Health**
- A. provides information and access to birth control
  - B. promotes health of pregnant women and unborn child
  - C. improves public health delivery systems specifically for women and children through advocacy, education, and research
- X. **Nutrition**
- A. field examines how food and nutrients affect wellness and lifestyle of population
  - B. sponsors healthy eating and exercise awareness
  - C. educates community about dangers of both obesity and over-dieting
- XI. **Public Health Laboratory Practice**
- A. laboratory professionals (microbiologists, biochemists, pathologists) who test biological and environmental samples in order to help diagnose prevent, treat, and control diseases in communities
  - B. ensure safety of public food and water
  - C. screen for presence of certain diseases within communities
  - D. respond to public health emergencies (e.g. infectious disease outbreaks, bioterrorism)
- XII. **Public Health Policy**
- A. works to improve the public's health through legislation at local, state, and federal levels
  - B. example: seat belt laws
- XIII. **Global (International) Health**
- A. global public health professionals who address health concerns among different cultures around the world
    1. works towards health challenges that transcend national boundaries
    2. this international field encompasses virtually all specializations of public health
  - B. Impact of Public Health
    1. Improvement of populations quality of life

2. increase in life expectancy
3. world-wide reduction of infant and child mortality
4. elimination or reduction of many communicable diseases

### **Activity**

Activity I: 15 min.

I. Focus on the values that underscore the *Principles of the Ethical Practice of Public Health* and explain why they are important to public health. See handout.

Activity II: 25 min.

II. Investigate a public health school of choice. Fill in the career specialty template showing that school's core areas of public health. Write a one-page report about the selected school (may include information about the campus, current research projects, admission information, size of student population, etc.). See handout: *Public Health School & Core Areas*.

Activity III: 141 min.

III. View HBO movie *And the Band Played On* (Run time: 141 minutes). Complete the movie question handout and participate in post-movie discussion questions.

### **Assessment**

Successful completion of Public Health Core Area chart and a written report.

Successful completion of movie questions from *And the Band Played On*.

### **Materials**

Activity I Handout: *Principles of the Ethical Practice of Public Health*

Activity II Template: *Public Health School & Core Areas*

Activity III DVD: *And the Band Played On*

Activity III Teacher notes over movie *And the Band Played On*

Activity III Post-movie discussion questions over movie

Activity III Questions handout over the movie

Activity III Key for Questions handout

### **Accommodations for Learning Differences**

For reinforcement, the student will outline the core areas of public health

For enrichment, the student will complete the online [Public Health Ethics](#) modules from UNC Gillings School of Global Public Health.

## **National and State Education Standards**

### National Health Science Cluster Standards

#### HLC05.01

Health care workers will understand how their role fits into their department, their organization and the overall health care environment. They will identify how key systems affect services they perform and quality of care.

#### HLC08.02

Health care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health care environment. They will perform quality health care delivery.

### TEKS

130.204. (c) 6 A research specific health careers;

130.209. (c) 5 C identify issues in research that influence the development of ethical principles and legal requirements currently research involving human subjects.

### Texas College Readiness Standards

#### English Language Arts

I. A. 2. Generate ideas and gather information relevant to the topic and purpose, keeping careful records of outside sources.

II. B. Understand new vocabulary and concepts and use them accurately in reading writing and speaking.

#### Science

IV. A. 1. Recognize how scientific discoveries are connected to technological innovations

IV. B. 2. Understand how commonly held ethical beliefs impact scientific research.

IV. C. 2. Recognize the role of people in important contributions to scientific knowledge.

#### Social Studies

I. A. 5. Evaluate the causes and effects of human migration patterns over time.

I. B. 3. Analyze causes and effects of major political, economic, and social changes in U.S. and world history.

I. F. 2. Analyze ethical issues in historical, cultural, and social contexts.

#### Cross-Disciplinary

I. A. 1. Engage in scholarly inquiry and dialogue.

## **Handout**

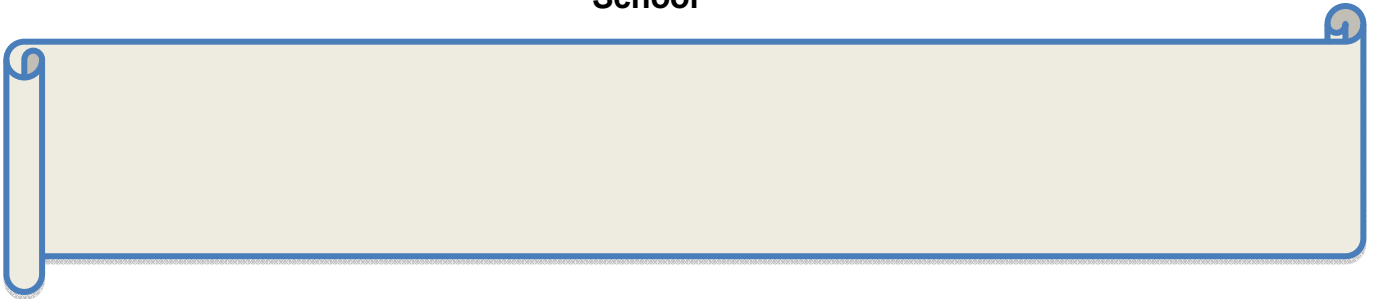
### **Twelve Principles of the Ethical Practice of Public Health**

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447186/>

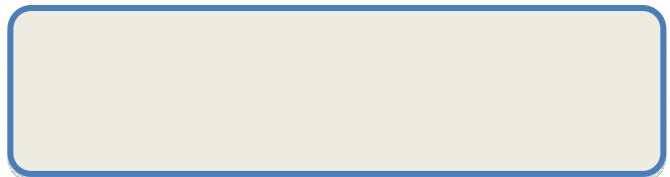
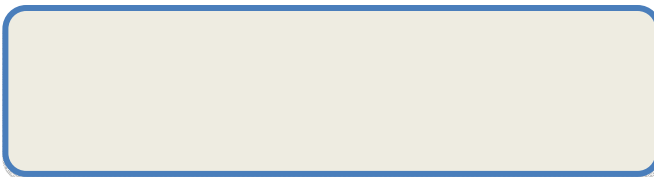
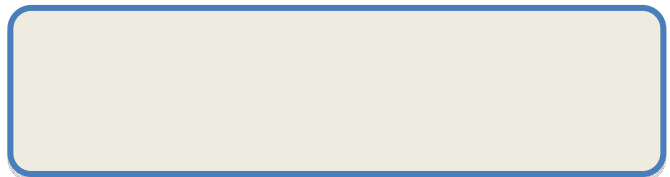
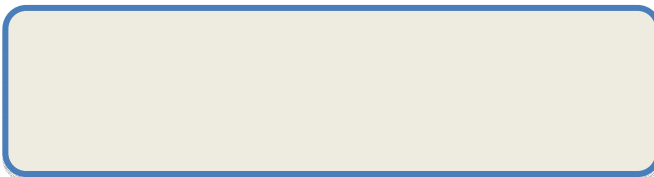
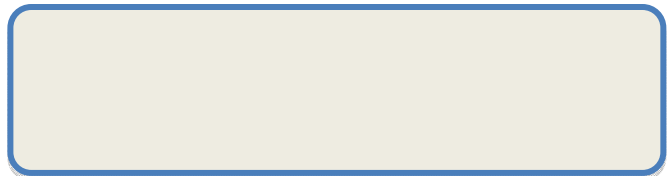
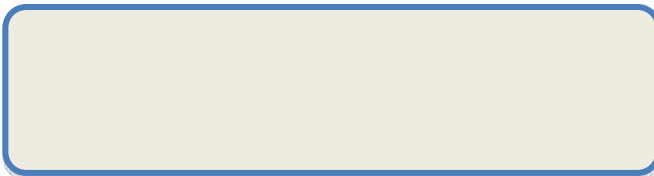
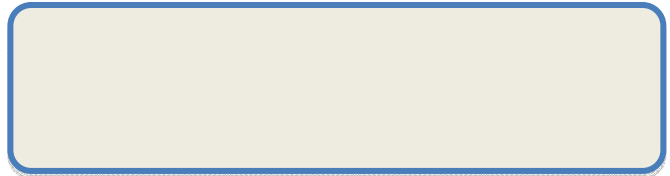
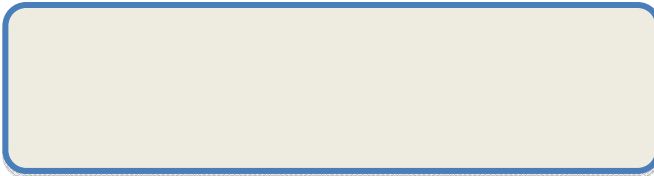
1. Public health should address principally the fundamental causes of disease and requirements for health, aiming to prevent adverse health outcomes.
2. Public health should achieve community health in a way that respects the rights of individuals in the community.
3. Public health policies, programs, and priorities should be developed and evaluated through processes that ensure an opportunity for input from community members.
4. Public health should advocate for, or work for the empowerment of, disenfranchised community members, ensuring that the basic resources and conditions necessary for health are accessible to all people in the community.
5. Public health should seek the information needed to implement effective policies and programs that protect and promote health.
6. Public health institutions should provide communities with the information they have that is needed for decisions on policies or programs and should obtain the community's consent for their implementation.
7. Public health institutions should act in a timely manner on the information they have within the resources and the mandate given to them by the public.
8. Public health programs and policies should incorporate a variety of approaches that anticipate and respect diverse values, beliefs, and cultures in the community.
9. Public health programs and policies should be implemented in a manner that most enhances the physical and social environment.
10. Public health institutions should protect the confidentiality of information that can bring harm to an individual or community if made public. Exceptions must be justified on the basis of the high likelihood of significant harm to the individual or others.
11. Public health institutions should ensure the professional competence of their employees.
12. Public health institutions and their employees should engage in collaborations and affiliations in ways that build the public's trust and the institution's effectiveness.

# Public Health Specialty Template

School



## Career Specialties (Core Areas) Offered



**Teacher Notes:**  
***And the Band Played On***

- This powerful and insightful HBO movie is based on the non-fiction book written by the American journalist and freelance reporter, Randy Shilts.
- The book was the first critical study of the history and development of the AIDS epidemic.
- The movie edited in actual news reports and documentary footage of authentic events that took place during the early years of the AIDS epidemic.
- The film introduces students to public health professionals at the CDC. It shows the process public health professionals follow when identifying and tracking a disease. Students will also observe the how the CDC researches as a team.
- The movie explores the political, religious, and social views of AIDS and homosexuals. It exposes the government's seemingly lack of interest in what was initially perceived as a "gay disease".
- Other insights include: the media's initial apathy in AIDS, the slow response of blood banks to safeguard their supply, and the infighting that went on between major research organizations, all of which ultimately the failed to prevent the spread of AIDS plus impede funding and research.
- The final memorial epilogue is also of great interest with actual video clips and pictures of AIDS patients—gay, straight; old, young; men, women, and children. This last part helps to illustrate the breadth of the impact of the AIDS epidemic.
- The book and movie title, *And the Band Played On*, is said to be in reference to the band on the Titanic, who kept playing as the ship was sinking.

## Post-Movie Discussion Questions

1. Why do you think that the gay population was living such an open, promiscuous lifestyle during the 1980s?
2. Why did the gay population disagree so vehemently against closing the bathhouses?
3. Why did a legal battle ensue between Dr. Robert Gallo and the French research group?
4. Why are AIDS infected people subject to opportunistic infections?
5. Why was the blood bank hesitant in safeguarding their blood supply even though there was evidence that it was probably infected with the AIDS virus?
6. Why did the CDC have to use case-control studies and interviews to track AIDS instead of using the more accurate randomized study?
7. When did the government & general population begin to show sensitivity and support towards AIDS?
8. How did AIDS eventually get the political clout and support it has today?
9. What do you think the title “And the Band Played On” means?

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

**DVD Questions: *And The Band Played On...***

**Directions**

*Please provide short answers for these questions as you watch this film.*

1. In the movie's prologue, what is the disease that Dr. Don Francis discovers in the Congo?
2. What type of public health professional was Dr. Don Francis?
3. What did the public health professionals mean by "shoe leather epidemiology"?
4. Early in the AIDS epidemic, a study was done that demonstrated AIDS was a sexually transmitted disease. Where did most of the sexual liaisons take place?
5. What acronym was originally given to the AIDS virus and what did that acronym stand for?
6. What is the name of the dark skin lesions that many AIDS patients were developing?
7. Who was the researcher who discovered the first retrovirus.
8. Throughout the movie the epidemiologists reiterated that they must always do three things in order to properly identify a disease: 1) What do you \_\_\_\_\_? 2) What do you \_\_\_\_\_? 3) What can you \_\_\_\_\_?



### **Key: *And The Band Played On...***

1. In the movie's prologue, what is the disease that Dr. Don Francis discovers in the Congo?  
**Ebola (hemorrhagic fever)**
2. What type of public health professional was Dr. Don Francis?  
**Epidemiologist**
3. What did the public health professionals mean by "shoe leather epidemiology"?  
**the tedious process of gathering information in the field (in the real world—interviewing patients, family; collecting data)**
4. Early in the AIDS epidemic, a study was done that demonstrated AIDS was a sexually transmitted disease. Where did most of the sexual liaisons take place?  
**bath houses**
5. What acronym was originally given to the AIDS virus and what did that acronym stand for?  
**GRID (Gay Related Immune Deficiency)**
6. What is the name of the dark skin lesions that many AIDS patients were developing?  
**Kaposi's sarcoma**
7. Who was the researcher who discovered the first retrovirus.  
**Dr. Robert Gallo**
8. Throughout the movie the epidemiologists reiterated that they must always do three things in order to properly identify a disease: 1) What do you \_\_\_\_\_? 2) What do you \_\_\_\_\_? 3) What can you \_\_\_\_\_?  
**"Think, Know, Prove" (what do you THINK; what do you KNOW; what can you PROVE)**
9. What do you think was meant by the boardroom question, "When doctors start acting like businessmen, who can the people turn to for doctors?"  
**What he is saying is: When doctors start acting like people who are more concerned with money, who will care for and treat patients?**
10. Why was it so difficult to get federal funding for AIDS research in the early years?
  - **seen as a "gay" disease**
  - **priority in earmarking large sums of government money to the department of defense**
  - **didn't realize the epidemic potential**
11. Give at least 4 reasons why the AIDS virus spread so quickly.
  - **Did not know in the beginning how AIDS was transmitted**
  - **The blood banks became infected**

- **Long latency period during which the disease could be transmitted to others**
- **Refusal of government to admit the seriousness of the disease outside the homosexual community**
- **Lack of federal funding for research and testing**

12. What is the name of the research clinic that was responsible for the definitive identification of the AIDS virus.

**Pasteur Institute in Paris, France**

13. What did you learn from this movie about HIV/AIDS, public health, and the government that you did not know?

**Any reasonable, thoughtful answer(s).**