Public Health 101 Series

Introduction to Public Health

Instructor name
Title
Organization

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Course Topics

Introduction to Public Health

1. Public Health Definition and Key Terms
2. History of Public Health
3. A Public Health Approach
4. Core Functions and Essential Services of Public Health
5. Stakeholder Roles in Public Health
6. Determining and Influencing the Public’s Health
Learning Objectives

After this course, you will be able to

- describe the purpose of public health
- define key terms used in public health
- identify prominent events in the history of public health
- recognize the core public health functions and services
- describe the role of different stakeholders in the field of public health
- list some determinants of health
- recognize how individual determinants of health affect population health
Topic 1

Public Health Definition and Key Terms
Public Health Defined

“The science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals.”

―CEA Winslow

Photo: IF Fisher and EL Fisk

Public health aims to provide maximum benefit for the largest number of people.

— World Health Organization

Fulfilling society’s interest in assuring conditions in which people can be healthy.

— Institute of Medicine

Public health aims to provide maximum benefit for the largest number of people.

— World Health Organization
Public Health Key Terms

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

**determinant**: factor that contributes to the generation of a trait.

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

**health outcome**: result of a medical condition that directly affects the length or quality of a person’s life.

Public health aims to provide **groups of people** with the right to be healthy and live in conditions that support health.

A. groups of people  
B. individuals
A(n) ________________________ is a disease occurrence among a population that is in excess of what is expected for a given time and place.

A(n) ________________________ is a disease occurrence among a population that is in excess of what is expected for a given time and place.

Knowledge Check

Fill in the blank with the correct answer.

A. pandemic
B. intervention
C. epidemic or outbreak
D. prevention

A(n) ________________________ is a disease occurrence among a population that is in excess of what is expected for a given time and place.
Topic 2
The History of Public Health
Sanitation and Environmental Health

500 BCE
- Greeks and Romans practice community sanitation measures

1840s
- The Public Health Act of 1848 was established in the United Kingdom

1970
- The Environmental Protection Agency was founded
Pandemics

Influenza
- 500 million infected worldwide in 1918

Polio
- Vaccine introduced in 1955; eradication initiative launched in 1988

HIV
- 34 million living with HIV worldwide; 20% decline in new infections since 2001
Preparedness for Disaster Response

**Biologic Warfare**
Plague used as a weapon of war during the Siege of Kaffa

**September 2001**
Public health surveillance conducted after the 9/11 attacks

**Hurricane Katrina**
Emergency services, public health surveillance, and disease treatment provided
Prevention Through Policy

Book of Leviticus
- The world’s first written health code

Tobacco Laws
- Laws banning smoking in public places

Obesity
- Food labeling and promotion of physical activity
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
Topic 3
A Public Health Approach
A Public Health Approach

Surveillance

Risk Factor Identification

Intervention Evaluation

Implementation

What is the problem?

What is the cause?

What works?

How do you do it?

Problem

Response
Public Health Core Sciences

- Prevention Effectiveness
- Surveillance
- Epidemiology
- Informatics
- Laboratory
Cholera — A Public Health Approach

Cholera, a fatal intestinal disease, was rampant during the early 1800s in London, causing death to tens of thousands of people in the area. Cholera was commonly thought to be caused by bad air from rotting organic matter.

Photo: TJ Kirn, MJ Lafferty, CMP Sandoe, and R Taylor, Dartmouth Medical School
John Snow is best known for his work tracing the source of the cholera outbreak and is considered the father of modern epidemiology.

Photo: London School of Hygiene and Tropical Medicine
Epidemiology — What is the Problem?

Cluster of Cholera Cases, London — 1854

Image: The Geographical Journal
Risk Factor Identification — What Is the Cause?

Cluster of Cholera Cases and Pump Site Locations

Image: The Geographical Journal
Intervention Evaluation — What Works?

Through continuous research, Snow understood what interventions were required to

- stop exposure to the contaminated water supply on a larger scale, and
- stop exposure to the entire supply of contaminated water in the area
John Snow’s research convinced the British government that the source of cholera was water contaminated with sewage.
Each public health core science helps us to **protect** and **promote** the public’s health by providing public health practitioners with the answers they need.
Match each component of the public health approach with the questions they answer.

A. Risk Factor Identification  B. Surveillance  
C. Implementation  D. Intervention Evaluation

B. Surveillance

1. What is the problem?

A. Risk Factor Identification

2. What is the cause?

D. Intervention Evaluation

3. What works?

C. Implementation

4. How do you do it?
Topic 4
Core Functions and Essential Services of Public Health
Three Core Functions of Public Health

Assessment
- Systematically collect, analyze, and make available information on healthy communities

Policy Development
- Promote the use of a scientific knowledge base in policy and decision making

Assurance
- Ensure provision of services to those in need

Ten Essential Public Health Services

1. Monitor Health
2. Diagnose and Investigate
3. Inform, Educate, Empower
4. Mobilize Community Partnership
5. Develop Policies
6. Enforce Laws
7. Link to/Provide Care
8. Assure a Competent Workforce
9. Evaluate
10. Research
## Core Functions at Government Levels

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Policy Development</th>
<th>Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National tobacco public health surveillance</td>
<td>Smoking ban on commercial flights</td>
<td>Federal grants for antismoking research</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor state tobacco use</td>
<td>Increase tobacco tax</td>
<td>Funding for campaign through Proposition 99</td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report on local tobacco use</td>
<td>County laws prohibiting smoking in bars</td>
<td>Resources to help smokers quit in multiple languages</td>
</tr>
</tbody>
</table>
Which of the following is NOT a core function of public health?

A. Assurance

B. Assessment

C. Authority

D. Policy development

Knowledge Check

Which of the following is NOT a core function of public health?
The essential health services of monitoring health and diagnosing and investigating disease relate to which core public health function?

A. Assurance

✓ B. Assessment

C. Policy Development
Topic 5
Stakeholder Roles in Public Health
Partners in the Public Health System

Ensuring the Conditions for Population Health

Community

Clinical Care Delivery System

Government Public Health Infrastructure

Academia

Employers and Businesses

The Media
## Nongovernmental Organization Examples

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional membership organizations</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>Associations related to a specific health concern</td>
<td>American Cancer Society</td>
</tr>
<tr>
<td>Organizations of citizens focused on health concerns</td>
<td>Americans for Nonsmokers Rights</td>
</tr>
<tr>
<td>Foundations that support health projects and influence public policy development</td>
<td>Bill and Melinda Gates Foundation</td>
</tr>
</tbody>
</table>
## Health Care as a Partner in Public Health

<table>
<thead>
<tr>
<th>Public Health</th>
<th>Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population focus</td>
<td>Individual patient focus</td>
</tr>
<tr>
<td>Public health ethic</td>
<td>Personal service ethic</td>
</tr>
<tr>
<td>Prevention or public health emphasis</td>
<td>Diagnosis and treatment emphasis</td>
</tr>
<tr>
<td>Joint laboratory and field involvement</td>
<td>Joint laboratory and patient involvement</td>
</tr>
<tr>
<td>Clinical sciences peripheral to professional training</td>
<td>Clinical sciences essential to professional training</td>
</tr>
<tr>
<td>Public sector basis</td>
<td>Private sector basis</td>
</tr>
</tbody>
</table>
Other Partners in Public Health

- **Media**
  - Vehicle for public discourse
  - Health education and promotion
  - Health communication
  - Social media as catalyst

- **Employers and Businesses**
  - Employer-sponsored health insurance programs
  - Wellness initiatives and benefits
  - Healthy workplaces and communities

- **Government Agencies**
  - City planning
  - Education
  - Health in all policies

- **Academia**
  - Education
  - Training
  - Research
  - Public Service
Knowledge Check

Match each stakeholder to its role in public health.

<table>
<thead>
<tr>
<th>A. Academia</th>
<th>B. Employers and businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Government</td>
<td>D. Media</td>
</tr>
</tbody>
</table>

1. **D. Media**  
Vehicle for public discourse

2. **C. Government**  
Health in all policies

3. **A. Academia**  
Education and training

4. **B. Employers and businesses**  
Wellness initiatives and benefits
Topic 6
Determining and Influencing the Public’s Health
Health Determinants

- Genes and biology
- Health behaviors
- Social or societal characteristics
- Health services or medical care

What Determines the Health of a Population?

- Genes and Biology
- Health Behaviors
- Medical Care
- Social/Societal Characteristics; Total Ecology

Health Impact Pyramid

- Tobacco warning labels; promote quitting
- Treatment of heart disease
- Vaccinations; cholesterol screening
- Seatbelt laws, smoking restrictions
- Poverty reduction, education

- Counseling and Education
- Medical Care
- Preventive Medicine
- Making Healthy Decisions the Default
- Socioeconomic Factors

Knowledge Check

List the four determinants of health.

1. Genes and biology
2. Health behaviors
3. Social/societal characteristics
4. Health services or medical care
Fill in the blanks using the following choices.

A. down  B. up

1. As we move **down** the health impact pyramid, the public health impact grows greater.

2. As we move **up** the health impact pyramid, the amount of individual effort increases.
Course Summary

During this course, you learned to

- describe the purpose of public health
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- recognize the core public health functions and services
- describe the role of different stakeholders in the field of public health
- list some determinants of health
- recognize how individual determinants of health affect population health
QUESTIONS?
Resources and Additional Reading

Resources and Additional Reading

- Skelton A. Introduction to public health science and practice.” Presented at the CDC Steven M. Teutsch Prevention Effectiveness Fellowship Orientation, August 15, 2012.
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