

Public Health 101 Series



## Public Health 101: History and Structure

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Centre for Surveillance, Epidemiology, and Laboratory Services  
Division of Scientific Education and Professional Development




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### Course Topics

#### Introduction to Public Health

1. Public Health Definition
2. History of Public Health
3. A Public Health Approach
4. Stakeholder Roles in Public Health

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### Learning Objectives

After this course, you will be able to

- Define and describe the purpose of public health
- Identify prominent events in the history of public health
- Describe stakeholders in the field of public health
- Describe the structure of public health

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## Public Health Defined



Photo: IF Fisher and EL Fisk

"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

Winslow CEA. The untitled field of public health. Mod Med 1920;2:183-91.

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## The Mission of Public Health



"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

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## The History of Public Health



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## 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

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## 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

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## 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

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### Prevention Through Policy

<p>Book of Leviticus</p>  <p>The world's first written health code</p>	<p>Tobacco Laws</p>  <p>Laws banning smoking in public places</p>	<p>Obesity</p>  <p>Food labeling and promotion of physical activity</p>
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### A Public Health Approach



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### A Public Health Approach

<p>↓</p> <p>Surveillance</p> <p><b>What is the problem?</b></p>	<p>↓</p> <p>Risk Factor Identification</p> <p><b>What is the cause?</b></p>	<p>↓</p> <p>Intervention Evaluation</p> <p><b>What works?</b></p>	<p>↓</p> <p>Implementation</p> <p><b>How do you do it?</b></p>
<p><b>Problem</b> →</p>		<p><b>Response</b></p>	

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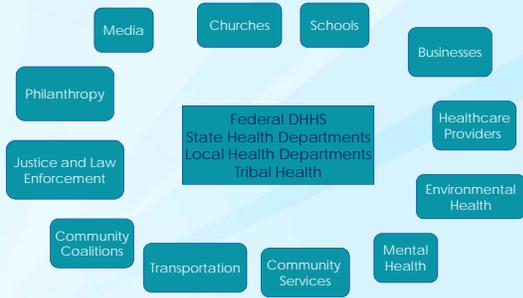
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A system of partnerships that includes, but is not limited to . . .




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### Health Care as a Partner in Public Health

Public Health	Health Care
Population focus	Individual patient focus
Public health ethic	Personal service ethic
Prevention or public health emphasis	Diagnosis and treatment emphasis
Joint laboratory and field involvement	Joint laboratory and patient involvement
Clinical sciences peripheral to professional training	Clinical sciences essential to professional training
Public sector basis	Private sector basis

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### Cholera — A Public Health Approach

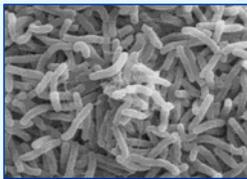


Photo: T.J. Kim, M.J. Lafferty, C.M.P. Sandoe, and R. Taylor, Dartmouth Medical School

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.

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## John Snow, Physician



Photo: London School of Hygiene and Tropical Medicine

John Snow is best known for his work tracing the source of the cholera outbreak and is considered the father of modern epidemiology.

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## Epidemiology — What is the Problem?

Cluster of Cholera Cases, London — 1854

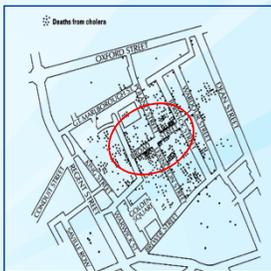


Image: The Geographical Journal

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## Risk Factor Identification — What Is the Cause?

Cluster of Cholera Cases and Pump Site Locations

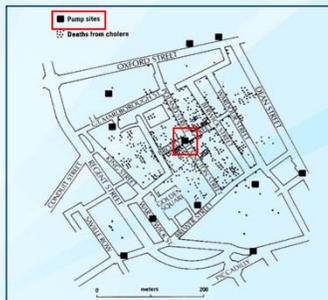


Image: The Geographical Journal

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### 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

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### Implementation — How Do You Do It?



Photo: Justin Cormack

John Snow's research convinced the British government that the source of cholera was water contaminated with sewage

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### Structure of Public Health in the United States

Office for State, Tribal, Local and Territorial Support  
Centers for Disease Control and Prevention

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## Governmental Public Health

### State and Local Health Departments

Retain the primary responsibility for health under the US Constitution

Category	Count
State and the District of Columbia Health Departments	51**
Tribal Health Departments	
Local Health Departments	2,565*
Territorial Health Departments	8**

\* American Public Health Association (APHA) (2011). *Public Health Workforce Study: The Public Health Workforce in the United States*. Washington, DC: APHA. <http://www.apha.gov/Workforce>.  
 \*\* American Public Health Association (APHA) (2011). *Public Health Workforce Study: The Public Health Workforce in the United States*. Washington, DC: APHA. <http://www.apha.gov/Workforce>.

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## Federal Public Health

### Roles and Responsibilities

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## Federal Public Health Responsibilities

- ❑ Ensure all levels of government have the capabilities to provide essential public health services
- ❑ Act when health threats may span more than one state, a region, or the entire nation
- ❑ Act where the solutions may be beyond the jurisdiction of individual states
- ❑ Act to assist the states when they lack the expertise or resources to effectively respond in a public health emergency (e.g., a disaster, bioterrorism, or an emerging disease)
- ❑ Facilitate the formulation of public health goals (in collaboration with state and local governments and other relevant stakeholders)

© American Public Health Association (APHA) (2011). *Public Health Workforce Study: The Public Health Workforce in the United States*. Washington, DC: APHA. <http://www.apha.gov/Workforce>.

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### Other Roles of Federal Public Health

Federal government plays a crucial role in

- Providing leadership, through regulatory powers, in setting health
  - Goals
  - Policies
  - Standards
- Contributing operational and financial resources
- Financing research and higher education
- Supporting the development of scientific and technological tools needed to improve the effectiveness of public health infrastructure at all levels

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### State Health Departments Roles and Responsibilities

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### State Roles

- Screening for diseases and conditions
- Treatment for diseases
- Technical assistance and training
- State laboratory services
- Epidemiology and surveillance

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Local Health Departments  
Roles and Responsibilities

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- Six Required Services of Wisconsin LHDs:
1. Communicable disease surveillance, prevention and control
  2. Generalized public health nursing program
  3. Services to promote health
  4. Services to prevent other diseases
  5. Abatement or removal of human health hazards
  6. Services to prevent the future incidence of occupational disease, environmental disease and human health hazard exposure
- <https://www.dhs.wisconsin.gov/lh-depts/lhdlevelrequirements.doc>

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- State and Local Health Department Governance Classification System
- ❑ **Mixed**—Some local health departments are led by state government, and some are led by local government. No one arrangement predominates in the state.
  - ❑ **State/Centralized**—All local health departments are units of state government, which makes most fiscal decisions.
  - ❑ **Shared**—All local health departments are governed by both state and local authorities.
  - ❑ **Local/Decentralized**—Local health departments are units led by local governments, which make most fiscal decisions.
- Source: ASTHO Profile of State Public Health, Volume Two, 2011

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**Wisconsin Local Governance**

- **Constitutional Home Rule**
  - Allows municipalities to determine their local affairs and government
- **Statutory Home Rule**
  - Except as otherwise provided by law, management and control of the municipality's property, finances, highways, navigable waters, and the public services

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**Public Health in American Indian and Alaska Native Tribes**

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**Tribal Public Health**

- **Tribal Health Department**—a corporation or organization operated under the jurisdiction of a federally recognized tribe, or association of federally recognized tribes, and is funded by the tribe(s) and/or contract service(s) from the Indian Health Service (IHS).
- **Tribal Health Organizations**—include Tribal Health Departments, Indian Health Service Units, Area Indian Health Boards and Urban Indian Health Centers (a much broader group, and relates to a variety of entities that might provide health services in a tribal setting).

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**QUESTIONS?**

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**Resources and Additional Reading**

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### For more information, please contact the Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

Visit: <http://www.cdc.gov> | Contact CDC at: 1-800-CDC-INFO or <http://www.cdc.gov/info>

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