


Public Health 101 Series




Public Health 101: History and Structure

Angela Nimsgern, MPH, CPH
Regional Director
WI DPH, Office of Policy and
Practice Alignment

Note: This slide set is in the public domain and may be customized as needed by the user for informational or educational purposes. Permission from the Centers for Disease Control and Prevention is not required, but citation of the source is appreciated.

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



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

2

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

3

Topic 1

Public Health Definition and Key Terms



4

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.

5

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

6



Knowledge Check

Fill in the blank with the correct answer.

- A. groups of people B. individuals

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

7



Knowledge Check

Fill in the blank with the correct answer.

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

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

8

Topic 2 The History of Public Health



9

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

10

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

11

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

12

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>
---------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------

13

Knowledge Check

Which of the following events in public health history have been pandemics? *(Select all that apply)*

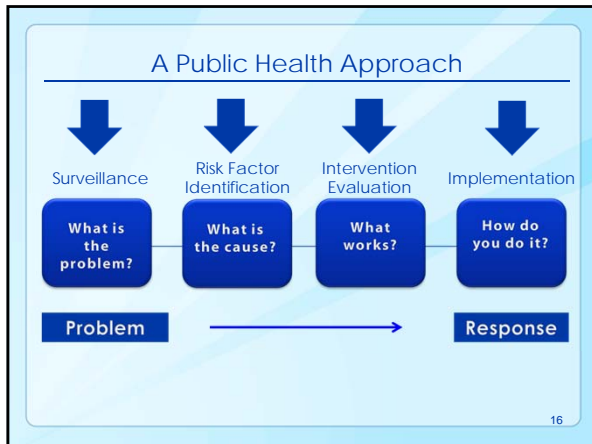
- A. Siege of Kaffa
- B. Influenza
- C. Polio
- D. Hurricane Katrina

14

Topic 3 A Public Health Approach



15



Cholera — A Public Health Approach

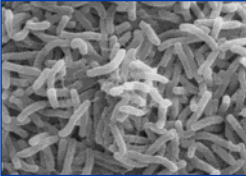


Photo: T.J. Kim, M.J. Lafferty, C.M.P. Sandoe, and R Taylor, Dartmouth Medical School

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.

17

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.

18

Epidemiology — What is the Problem?

Cluster of Cholera Cases, London — 1854

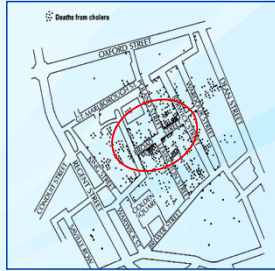


Image: The Geographical Journal

19

Risk Factor Identification — What Is the Cause?

Cluster of Cholera Cases and Pump Site Locations

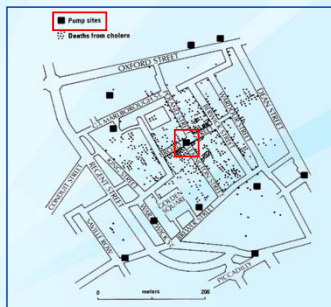


Image: The Geographical Journal

20

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

21

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

22



Knowledge Check

Match each component of the public health approach with the questions they answer.

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

- | | |
|--------------------------------------|-------------------------|
| <u>B. Surveillance</u> | 1. What is the problem? |
| <u>A. Risk Factor Identification</u> | 2. What is the cause? |
| <u>D. Intervention Evaluation</u> | 3. What works? |
| <u>C. Implementation</u> | 4. How do you do it? |

23

Topic 4 Core Functions and Essential Services of Public Health



24

Three Core Functions of Public Health



Institute of Medicine. The future of public health. Washington, DC: National Academies Press; 1988.

25

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

26

Core Functions at Government Levels

	Assessment	Policy Development	Assurance
Federal	National tobacco public health surveillance	Smoking ban on commercial flights	Federal grants for antismoking research
State	Monitor state tobacco use	Increase tobacco tax	Funding for campaign through Proposition 99
Local	Report on local tobacco use	County laws prohibiting smoking in bars	Resources to help smokers quit in multiple languages

27



Knowledge Check

Which of the following is NOT a core function of public health?

- A. Assurance
- B. Assessment
- ✓ C. Authority
- D. Policy development

28

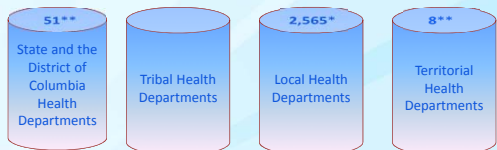
Structure of Public Health in the United States

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

Governmental Public Health

State and Local Health Departments

Retain the primary responsibility for health under the US Constitution



© 2010-2011 National Center for State and Local Health Departments (NCSLHD) 2011
© 2010-2011 National Center for State and Local Health Departments (NCSLHD) 2011

Federal Public Health
Roles and Responsibilities

- 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)
- Source: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health. *Public Health 101: A Guide for Healthy People in Healthy Communities* at the U.S. Department of Health and Human Services, 2010.

- 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

State Health Departments
Roles and Responsibilities

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

Local Health Departments
Roles and Responsibilities

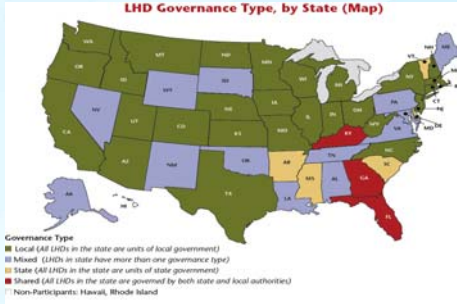
State and Local Health Department Governance Classification System

- ❑ **Local/Decentralized**—Local health departments are units led by local governments, which make most fiscal decisions.
- ❑ **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.

Source: ASTHO Profile of State Public Health, Volume Two, 2011

National Profile of Local Health Departments

LHD Governance Type, by State (Map)



Source: 2010 National Profile of Local Health Departments—NACCHO

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

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/lhlevelrequirements.doc>

National Profile of Local Health Departments

Percentage of LHDs Providing the 10 Most Frequent Activities and Services Available Through LHDs Directly

Rank	Activity or Service	Percentage of LHDs
1	Adult Immunization Provision	92%
2	Communicable/Infectious Disease Surveillance	92%
3	Child Immunization Provision	92%
4	Tuberculosis Screening	85%
5	Food Service Establishment Inspection	78%
6	Environmental Health Surveillance	77%
7	Food Safety Education	76%
8	Tuberculosis Treatment	75%
9	Schools/Daycare Center Inspection	74%
10	Population-Based Nutrition Services	71%

n ranged from 2,057 to 2,091

Source: 2010 National Profile of Local Health Departments—NACCHO

Public Health in American Indian and Alaska Native Tribes

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).

Wisconsin Tribal Health Departments



State-Tribal Consultation Initiative <http://witrribes.wi.gov/>

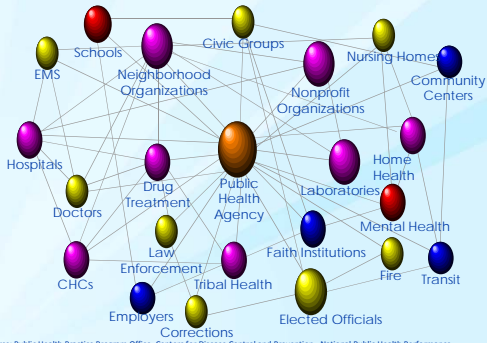
“...The determinants of health are beyond the capacity of any one practitioner or discipline to manage....We must collaborate to survive, as disciplines and as professionals attempting to help our communities and each other.”

—Institute of Medicine, 1999

“It is logical to expect that there is strength in numbers and that partnerships can mobilize material and human resources and be more effective at achieving desired goals than individuals working alone.”

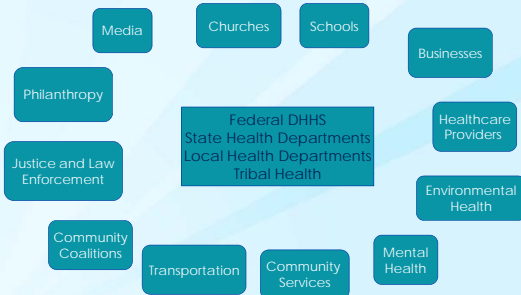
– Karen Glanz, *Health Behavior and Health Education*, 2002

Public Health System



Source: Public Health Practice Program Office, Centers for Disease Control and Prevention, National Public Health Performance Standards Program, User Guide (first edition), 2002. (Current version available at www.cdc.gov/forhsp)

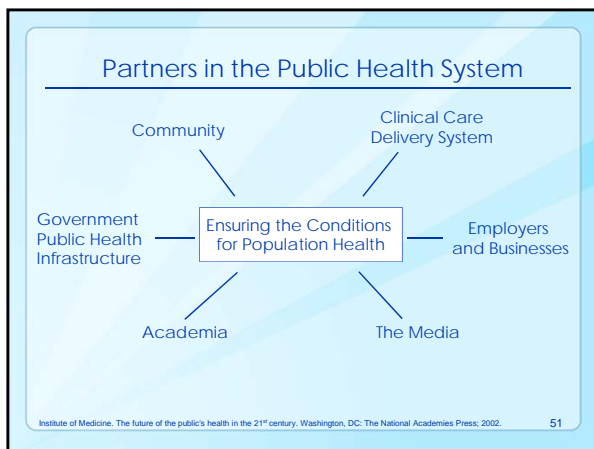
A system of partnerships that includes, but is not limited to . . .





Topic 5
Stakeholder Roles
in Public Health

50



Nongovernmental Organization Examples

Organization Type	Example
Professional membership organizations	American Public Health Association
Associations related to a specific health concern	American Cancer Society
Organizations of citizens focused on health concerns	Americans for Nonsmokers Rights
Foundations that support health projects and influence public policy development	Bill and Melinda Gates Foundation

Institute of Medicine. Who will keep the public healthy? Workshop summary. Washington, DC: The National Academies Press; 2003. 52

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

53

Other Partners in Public Health



54



Knowledge Check

Match each stakeholder to its role in public health.

A. Academia	B. Employers and businesses
C. Government	D. Media

- D. Media 1. Vehicle for public discourse
- C. Government 2. Health in all policies
- A. Academia 3. Education and training
- B. Employers and businesses 4. Wellness initiatives and benefits

55

Course Summary

During this course, you learned 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

56

QUESTIONS?

57

Resources and Additional Reading

- American public health Association (APHA). The Prevention and public health Fund: a critical investment in our nation's physical and fiscal health. APHA Center for Health Policy Issue Brief. Washington, DC: APHA; 2012. http://www.apha.org/NR/rdonlyres/8FA13774-AA47-43F2-838B-1B0757D111C6/0/APHA_PrevFundBrief_June2012.pdf.
- California Department of public health. TobaccoFreeCA. <http://www.Tobaccofreeca.org>.
- Centers for Disease Control and Prevention. Key facts about seasonal flu vaccine. <http://www.cdc.gov/flu/protect/keyfacts.htm>.
- Centers for Disease Control and Prevention. Overweight and obesity. <http://www.cdc.gov/obesity/index.html>.
- Centers for Disease Control and Prevention. Social determinants of health. <http://www.cdc.gov/socialdeterminants/FAQ.html>.
- Centers for Medicare and Medicaid Services. National health expenditure projections: 2008-2018. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/proj2008.pdf>.
- Dean H. Introduction to public health, epidemiology, and surveillance. Presented at the CDC Science Ambassador Program, July 16, 2012.
- Frieden, TR. Framework for public health action: the health impact pyramid. Am J public health 2010;100:590-5.
- Kindig D, Stoddard G. What is population health? Am J public health. 2003;93:380-3.
- Institute of Medicine. For the public's health: investing in a healthier future. Washington, DC: National Academies Press; 2012.
- Institute of Medicine. Primary care and public health: exploring integration to improve population health. Washington, DC: The National Academies Press; 2012.

58

Resources and Additional Reading

- Institute of Medicine. The future of public health. Washington, DC: The National Academies Press; 1988.
- Institute of Medicine. The future of the public's health in the 21st century. Washington, DC: The National Academies Press; 2002.
- Institute of Medicine. Who will keep the public healthy? Workshop summary. Washington, DC: The National Academies Press; 2003.
- Pearl R. Tobacco smoking and longevity. Science 1938;87:216-7.
- Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, June 19-22, 1946.
- Federal Communications Commission. Texting while driving. <http://www.fcc.gov/guides/texting-while-driving>.
- UNAIDS. UNAIDS World AIDS Day Report, 2012. http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/JC2434_WorldAIDSday_results_en.pdf.
- Skelton A. Introduction to public health science and practice*. Presented at the CDC Steven M. Teutsch Prevention Effectiveness Fellowship Orientation, August 15, 2012.
- US Department of Health, Education, and Welfare. Smoking and health. Washington, DC: public health Service; 1964. <http://profiles.nlm.nih.gov/ps/access/NNBBMQ.pdf>.
- Winslow CEA. The untitled field of public health. Mod Med 1920;2:183-91.
- World Health Organization (WHO). World report on violence and health. Geneva: WHO; 2002. http://www.who.int/violence_injury_prevention/violence/world_report/en/.

59

Disclaimers

Links provided in this course to nonfederal organizations are provided solely as a service to our users. These links do not constitute an endorsement of these organizations nor their programs by the Centers for Disease Control and Prevention (CDC) or the federal government, and none should be inferred. CDC is not responsible for the content contained at these sites.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the Division of Scientific Education and Professional Development, Center for Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention, the Public Health Service, or the U.S. Department of Health and Human Services.

The findings and conclusions in this course are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

60

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>

The findings and conclusions in this course are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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

