

A Brief History of Public Health

What is Public Health?

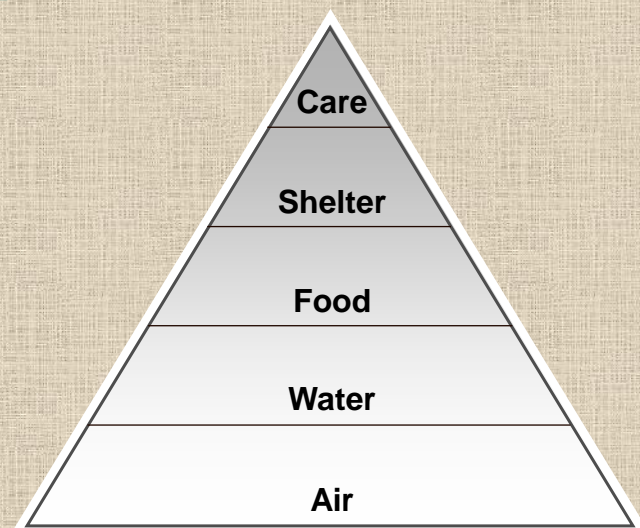
***“To promote health and quality of life
by preventing and controlling
disease, injury, and disability.”***

—CDC Mission Statement

Survive the Tribe



Requirements for Survival



Public Health Codes

- Tribal Rules
- Hieroglyphs
- Chinese Empire
- Bible (Leviticus)
- Koran
- Roman Senate



Timeline

- Ancient Greece
- Roman Empire
- Middle Ages
- Birth of Modern Medicine
- “Great Sanitary Awakening”
- Modern Public Health

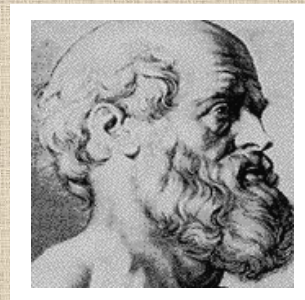
Ancient Greeks (500-323 BC)

- Personal hygiene
- Physical fitness
 - Olympics
- Naturalistic concept
 - Disease caused by imbalance between man and his environment
 - Rejected supernatural theory of disease
 - Introduction of scientific method
 - Hippocrates



Hippocrates (b. 460 BC)

- Father of Western medicine
- Hippocratic oath
- Causal relationships
 - Disease and climate, water, lifestyle, and nutrition
- Coined the term **epidemic**
 - *Epis* (“on” or “akin to”)
 - *Demos* (“people”)



Roman Empire (23 BC – 476 AD)

- Adopted Greek health values
- Great engineers
 - Sewage systems
 - Aqueducts
- Administration
 - Public baths
 - Water supply
 - Markets



Roman Aqueducts



Le Pont du Gard

Galen (130-205 AD)

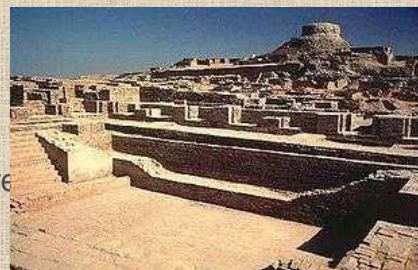
- Disease is due to predisposing, exciting and environmental factors (Epidemiological triad)
- His teachings remained unquestioned for 1400 years

Indian system of medicine



↻ Indus valley civilization

- (3500BC to 1500 BC)
- ↻ First Urban sanitation systems
- ↻ Elaborate drainage systems were
- ↻ Drains were covered with slabs
- ↻ Wells and baths in houses
- ↻ Knowledge of dentistry



Middle Ages (476-1450 AD)



- Saw deterioration of Roman infrastructure
- Shift away from Greek and Roman values
 - Physical body less important than spiritual self
 - Decline of hygiene and sanitation
 - Diseases were widely viewed as inescapable
- Beginnings of PH tools
 - Quarantine of ships
 - Isolation of diseased individuals

The Plague

Epidemic of plague (black death) in 14th century
Death of 25% to 50% of population



700-1200 AD

- Islam-preservation of ancient health knowledge, schools of medicine, medical advances (Ibn Sinna)
- Rise of cities, trade and commerce.
- Crusades-contact with Arabic medicine.

Chinese

- ⌘ They developed a system of variolation to protect against small pox
- ⌘ Health is a result of balance between Yin and Yang
- ⌘ Hygiene was recognized as determinant of Health
- ⌘ Hydrotherapy, massage, acupuncture



Renaissance (1400-1600 AD) Global Exploration

- Disease, spread by traders and explorers
- Killed 90% of indigenous people in New World



Age of Enlightenment (1700's)

- Period of revolution, industrialization, and the growth of cities
- Miasma – “Bad Air”
- Dr. James Lind discovered that scurvy could be controlled by lime juice
- Jenner discovered a vaccine against smallpox



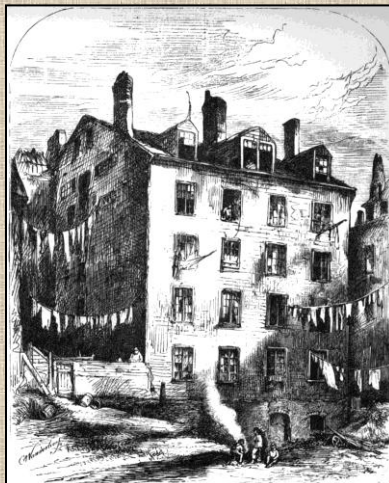
Age of Reason and Enlightenment (1650-1800 AD)

Birth of Modern Medicine

- William Harvey
 - 1628 theories of circulation
- Edward Jenner
 - 1796 cowpox experiment
 - Coined the term **vaccine** (*vacca*, Latin for “cow”)



Industrialization Urbanization (1800s)



Great Sanitary Awakening (1800s-1900s)

- Growth in scientific knowledge
- Humanitarian ideals
- Connection between **poverty** and disease
- Water supply and sewage removal
- Monitor community health status

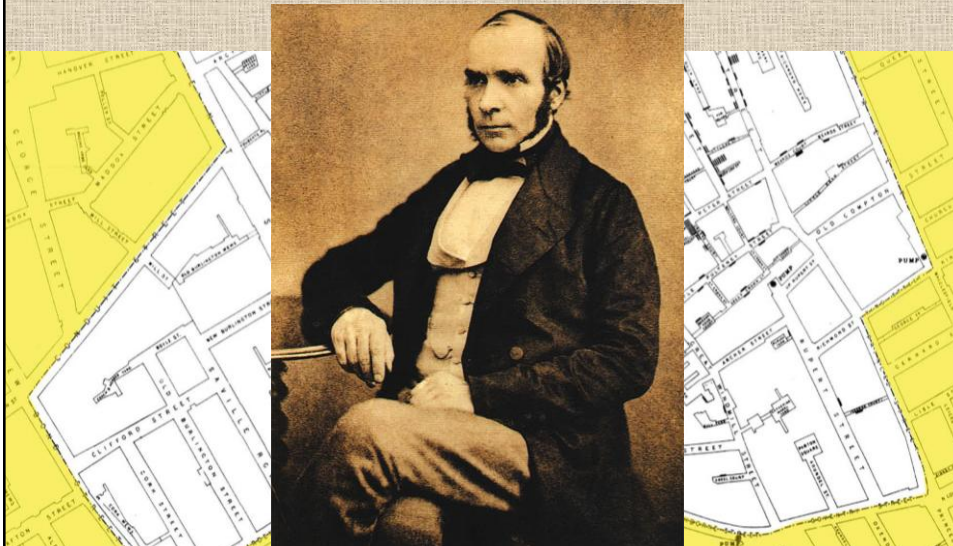


The 1800's



- Smallpox, cholera, typhoid, TB, and other diseases reached exceedingly high endemic levels
- Dr. John Snow was the first to say that diseases were caused by microorganisms
- Louis Pasteur furthered the study of disease etiology (germs/bacteria) and introduced the 1st scientific approach to immunization and pasteurization
- Lister developed the antiseptic method of treating wounds by using carbolic acid & he introduced the principle of asepsis to surgery

Dr. John Snow (1813-1858)



Epidemiology (1854)

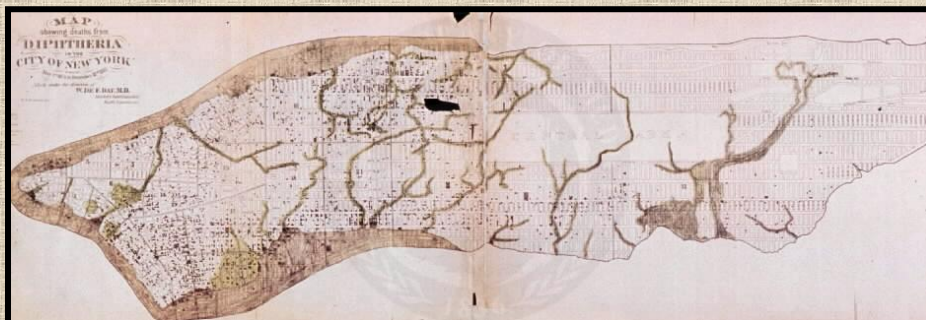


Broad Street Pump



Map of Diphtheria Deaths New York City

May 1, 1874 to December 31, 1875



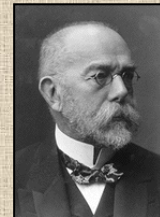
Made under the direction of
W. De F. Day, M.D., Sanitary Superintendent, NYC Health Dept.
www.nlm.nih.gov

Growth in Scientific Knowledge

- Louis Pasteur
 - 1862 germs caused many diseases
 - 1888 first public health lab
- Robert Koch
 - 1883 identified the vibrio that causes cholera, 20 years after Snow's discovery
 - Discovered the tuberculosis bacterium



1822-1895



1843-1910

Redefining the Unacceptable

“The landmarks of political, economic and social history are the moments when some condition passed from the category of the given into the category of the intolerable...The history of public health might well be written as a record of successive redefinings of the unacceptable.”

- Geoffrey Vickers, Secretary, Medical Research Council, Great Britain, 1958

Ten Great Achievements in Public Health, 1900-1999

1. Vaccination.
2. Motor-vehicle safety.
3. Safer workplaces.
4. Control of infectious diseases.
5. Decline in deaths from coronary heart disease and stroke.
6. Safer and healthier foods.
7. Healthier mothers and babies.
8. Family planning.
9. Fluoridation of drinking water.
10. Recognition of tobacco use as a health hazard.

CDC, Morbidity and Mortality
Weekly Report, December 24, 1999
/48(50); 1141.
Available at:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4850bx.htm>

Redefining the Unacceptable

In the next 5 minutes:

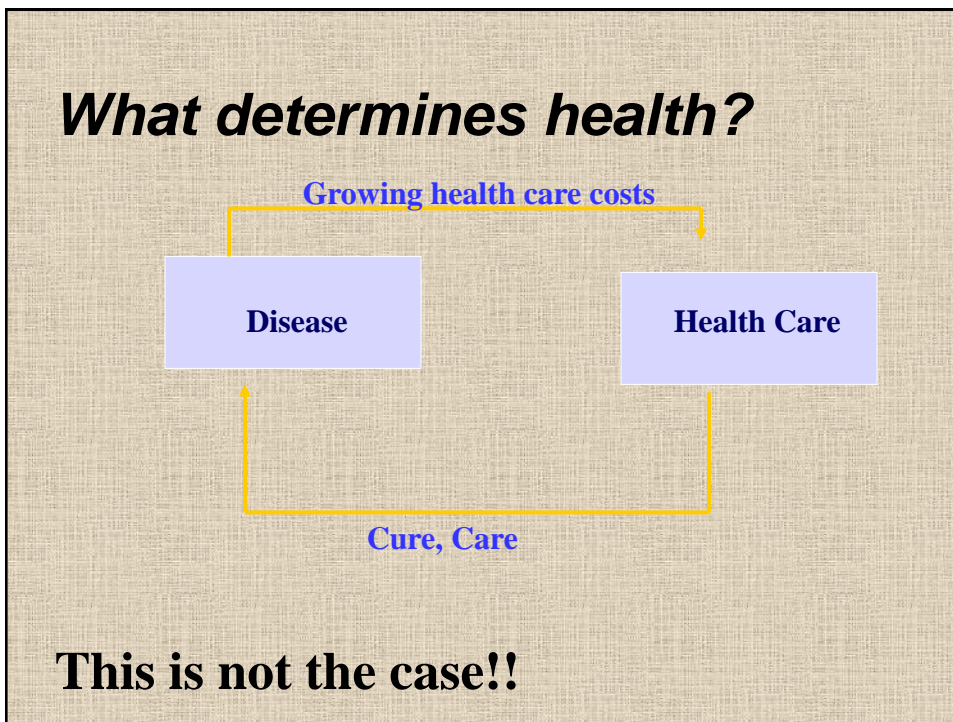
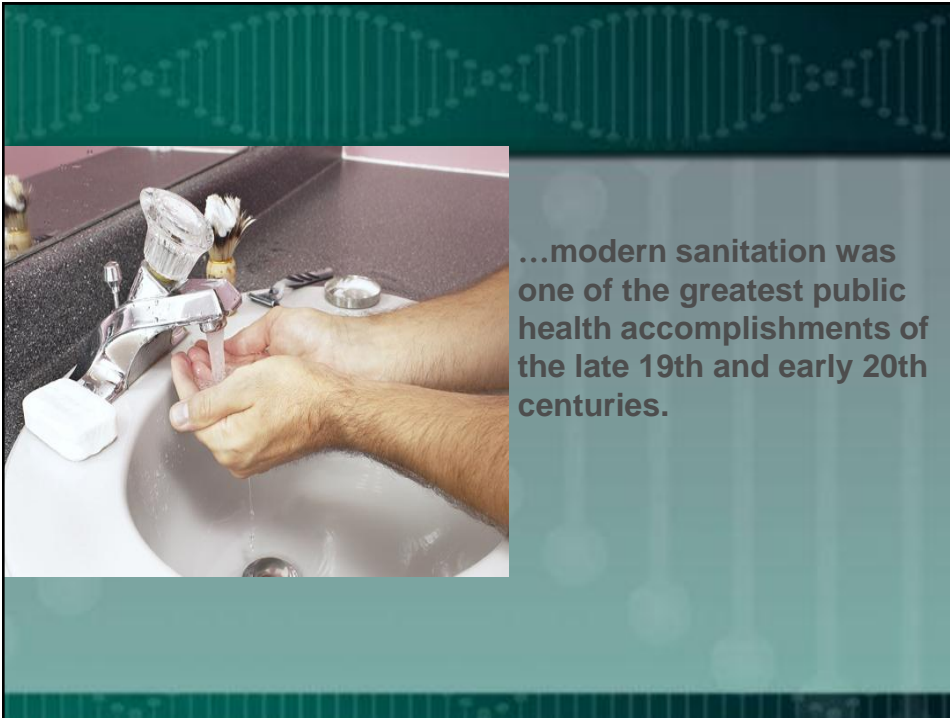
- ✓ Brainstorm and record a list of “things” affecting the public’s health that have passed from tolerable (accepted) to intolerable (unaccepted).
- ✓ Include items that you wish would become unacceptable.

Sanitation Revolution

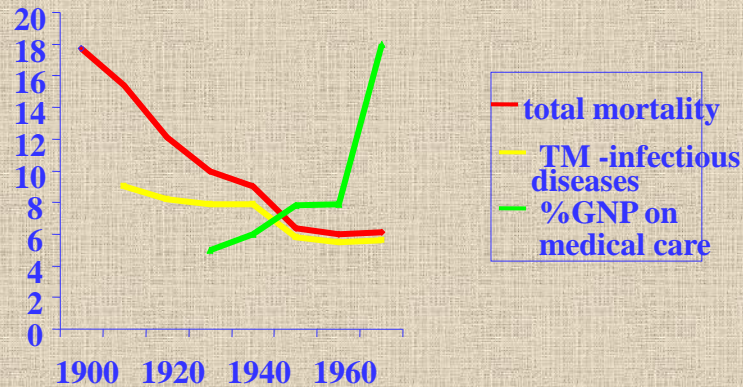
- Clean water; water treatment
- Food inspection
- Soaps, disinfectants, and pharmaceuticals
- Personal hygiene (bathing)
- Public works departments; garbage collection, landfills, and street cleaning
- Public health departments and regulation

Challenges Ahead

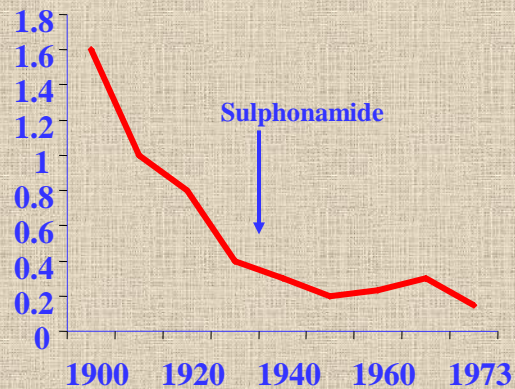
New and Persistent Problems in Public Health



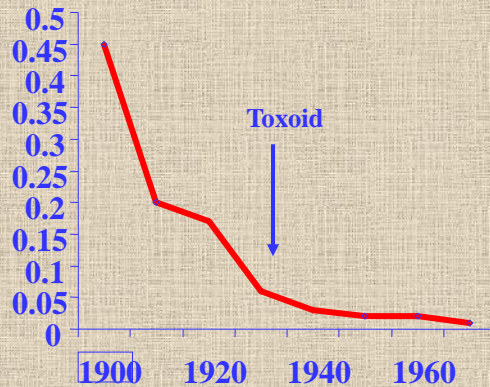
Mortality rates US 1900-1970 + GNP on medical care



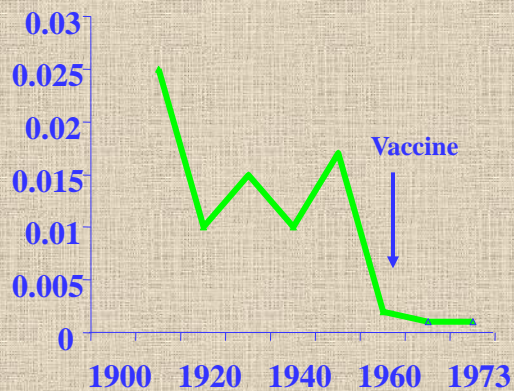
Fall in std death rates for infectious diseases US 1900-1973 (Pneumonia)



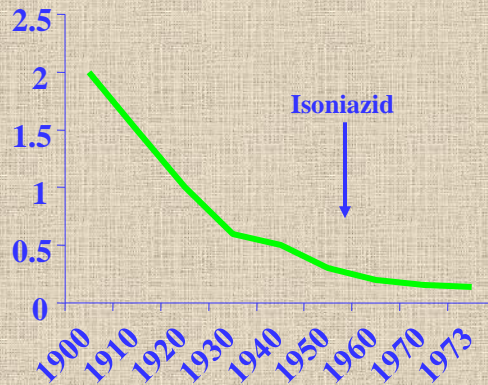
Fall in std death rates for infectious diseases US 1900-1973 (Diphtheria)



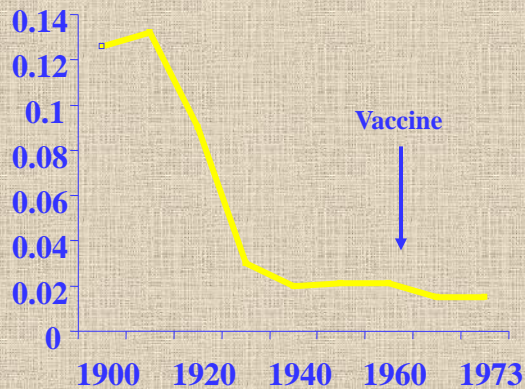
Fall in std death rates for infectious diseases US 1900-1973 (Poliomyelitis)



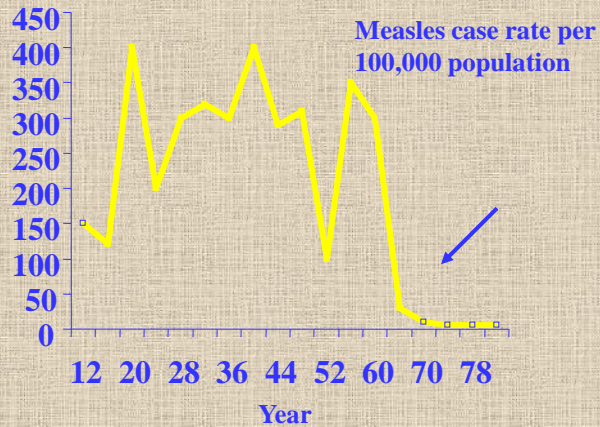
Fall in std death rates for infectious diseases US 1900-1973 (Tuberculosis)



Fall in std death rates for infectious diseases US 1900-1973 (Measles)

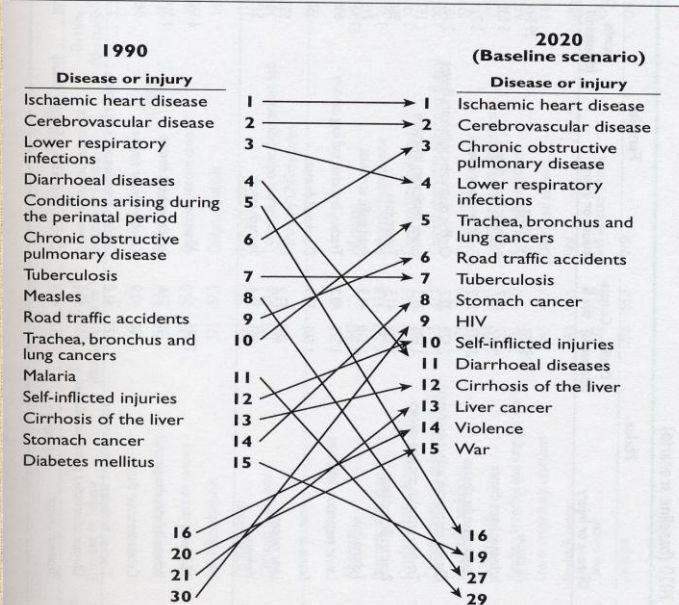


Measles incidence

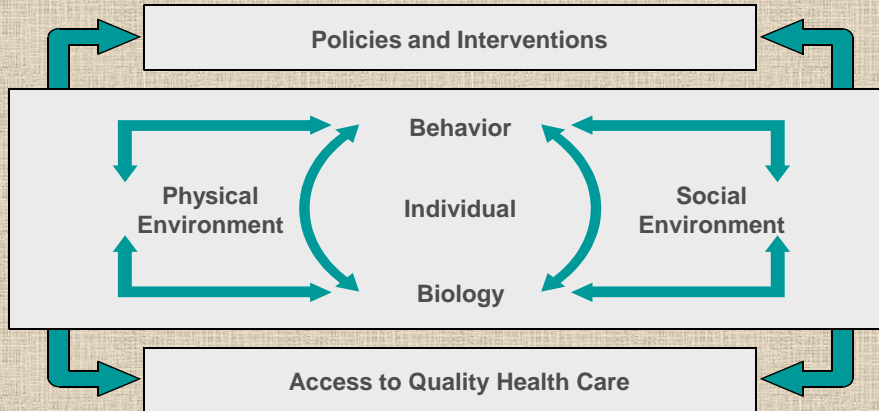


Deaths

Figure 7.9 Change in rank order of deaths for the 15 leading causes, world, 1990–2020



Multiple Determinants of Health



Source: U.S. Department of Health and Human Services, Health People 2010