

**PLAGUES IN MAN**  
**PUBLIC HEALTH & EPIDEMIOLOGY**

**I. INFECTIOUS DISEASE IN THE USA - THEN AND NOW**

**A. THEN (1800):**

**MORTALITY**

>50% DUE TO INFECTIOUS AGENTS  
25% DUE TO TB ALONE  
LIFE EXPECTANCY <50 YEARS  
INFANT MORTALITY 50% IN SOME AREAS  
PERTUSSIS, DIPHTHERIA  
FLU, SMALLPOX, MEASLES  
NO VACCINES (smallpox vaccine just introduced)  
NO ANTIBIOTICS  
NO OR LITTLE PUBLIC HEALTH (JOHN SNOW  
INVESTIGATED CHOLERA OUTBREAK IN LONDON IN  
1854 - THE BROAD STREET PUMP)  
NO ASEPTIC SURGERY

**B. NOW (1996):**

**MORTALITY**

ABOUT 5 % MORTALITY DUE TO I. D.  
LIFE EXPECTANCY >70  
TOTAL MORTALITY 2,314,000 (0.80% OF POP.)  
1,661,700 (72 %) CHRONIC DISEASE  
79,000→(3.4%) PNEUMONIA/INFLUENZA  
34,700↓ (1.5%) AIDS  
1,202↓ (0.08%) TB  
3,780↑ (0.04%) HEPATITIS (ALL TYPES)  
320↓ (0.02%) MENINGITIS/ENCEPHALITIS

INFANT - 0.9% OF LIVE BIRTHS (1996)

(ARROWS INDICATE RECENT TRENDS)

**II. CONTROL OF RESERVOIRS**

- A. ANIMALS AND INSECTS - ZONOSIS**
- B. HUMAN CARRIERS [CHRONIC DISEASE]**
- C. PHYSICAL CONDITIONS**

**III. CONTROL OF TRANSMISSION**

- A. FOOD**
  - 1. MEATS AND POULTRY
  - 2. FRESH AND FROZEN FOODS
  - 3. CANNED FOODS
- B. WATER**
  - 1. COMMUNITY WATER - WELLS & RESERVOIRS
  - 2. WATER TREATMENT
- C. AIR**

- IV. PREVENTION OF DISEASE - IMMUNIZATION
  - A. BACTERIAL AND VIRAL VACCINES
  - B. PEDIATRIC VACCINES
  - C. ADULT VACCINES
  - D. ANIMAL VACCINES [RABIES AND ANTHRAX]
- V. ISOLATION OF DISEASE - QUARANTINE
  - A. HIGHLY COMMUNICABLE (& SERIOUS) DISEASES
  - B. LIST OF DISEASES:
    - SMALLPOX, CHOLERA, PLAGUE, YELLOW FEVER, TYPHOID FEVER, RELAPSING FEVER [MENINGITIS & EBOLA]
- VI. ERADICATION OF DISEASE
  - A. SMALLPOX - 1967-77 -- WORLD HEALTH ORGANIZATION (WHO)
  - B. POLIO - 1985-NOW ROTARY INTERNATIONAL & WHO
  - C. WHAT'S NEXT
- VII. SURVEILLANCE
  - A. REPORTABLE DISEASES - 29 BACTERIAL, 14 VIRAL
  - B. NEWSLETTER - MMWR
  - C. REPORTING HIERARCHY
    - 1. HOSPITALS & PHYSICIANS
    - 2. COUNTY HEALTH DEPARTMENTS
    - 3. STATE EPIDEMIOLOGISTS
    - 4. CENTER FOR DISEASE CONTROL (CDC) IN ATLANTA
    - 5. WORLD HEALTH ORGANIZATION
  - D. INFLUENZA WATCH - ONE EXAMPLE
- VIII. GLOBAL HEALTH CONSIDERATIONS
  - A. ENDEMIC DISEASES
  - B. IMMUNIZATIONS AND TRAVEL
  - C. QUARANTINE OF ANIMALS
  - D. FOOD AND WATER
  - E. PANDEMICS - THE INFLUENZA STORY
- IX. EPIDEMIOLOGY
  - A. INTRODUCTION - TERMS AND DEFINITIONS
    - 1. EPIDEMIC, PANDEMIC, ENDEMIC, OUTBREAK
    - 2. MORBIDITY AND MORTALITY
    - 3. DISEASE PROGRESSION - STAGES & CHARTING
      - a. EXPOSURE
      - b. INFECTION
      - c. INCUBATION - INCUBATION PERIOD
      - d. ACUTE STAGE
      - e. RESOLUTION
      - f. SEQUELAE
  - B. WHAT IS EPIDEMIOLOGY ?
    - 1. STUDY OF EPIDEMICS- JOHN SNOW & CHOLERA
    - 2. RELATIONSHIPS OF MAN AND DISEASE AGENTS
    - 3. STUDY OF DISEASES IN POPULATIONS
      - a. OCCURANCE
      - b. DISTRIBUTION
      - c. CONTROL
      - d. SURVEILLANCE