Introduction and Cell Organization

Nester Chapter 1

1. Microbiology Implications Today (5-7)

    A. Normal Microbiota (or Flora)

        i. Commensal Relationships

        ii. Human Body as Community (or Superorganism, page 5)

        iii. Commensal Relationship → Mutualistic Relationship

    B. Environmental Microbiology (pages 5-6)

        i. Recycling of organic matter

        ii. Bioremediation

    C. Food Industry (page 6)

        i. Fermentation of Food products

        ii. Food Preservation

        ii. Probiotics and Health

        iii. Food Spoilage

    D. Biotechnology and Industry (page 6)

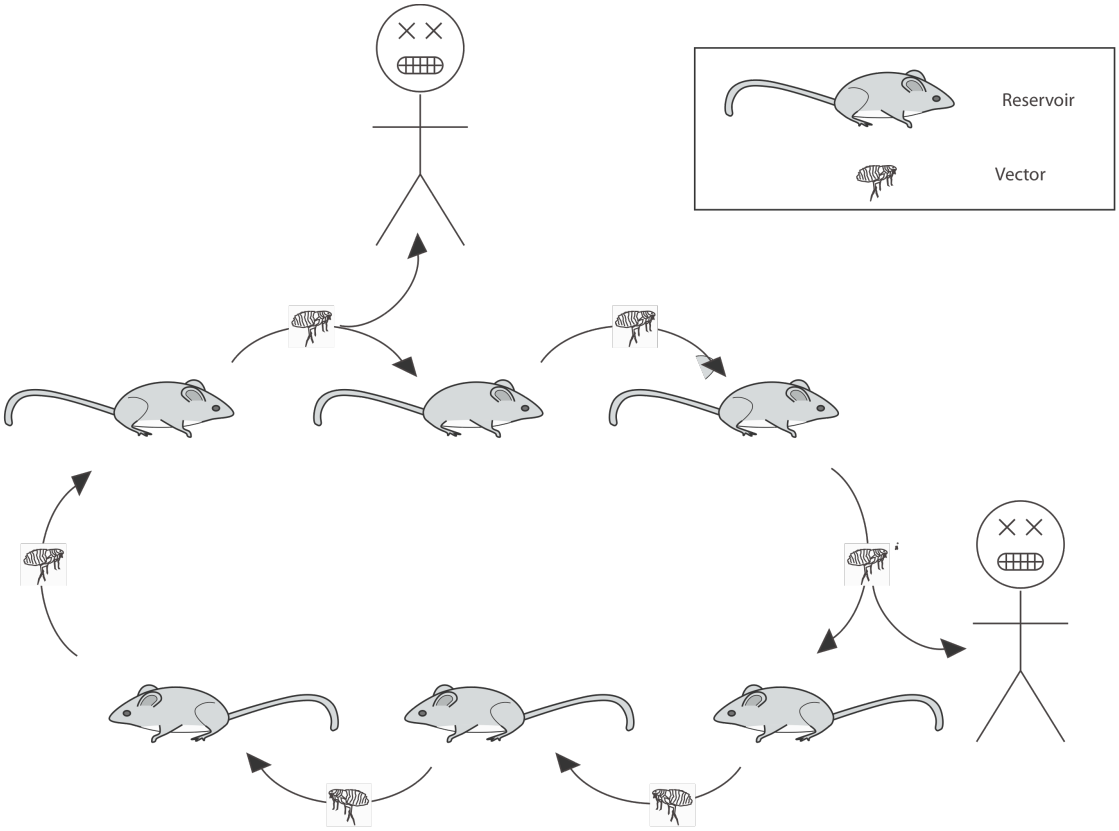
    E. Pathogens and Disease (page 7)

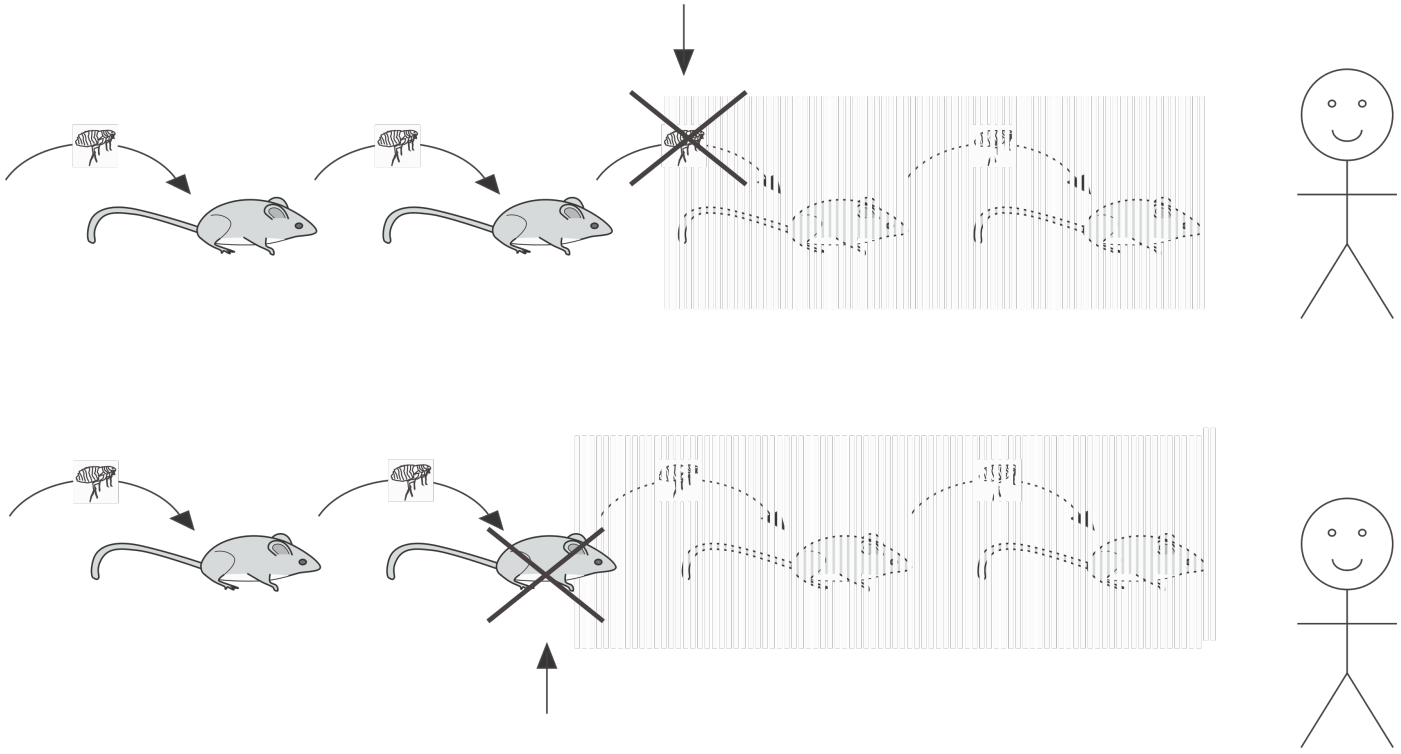
        i. Pathogenic Relationships

        ii. Pathogenic Organisms and Medical Science

            a. Small Pox

            b. Plague


Reservoir
Vector

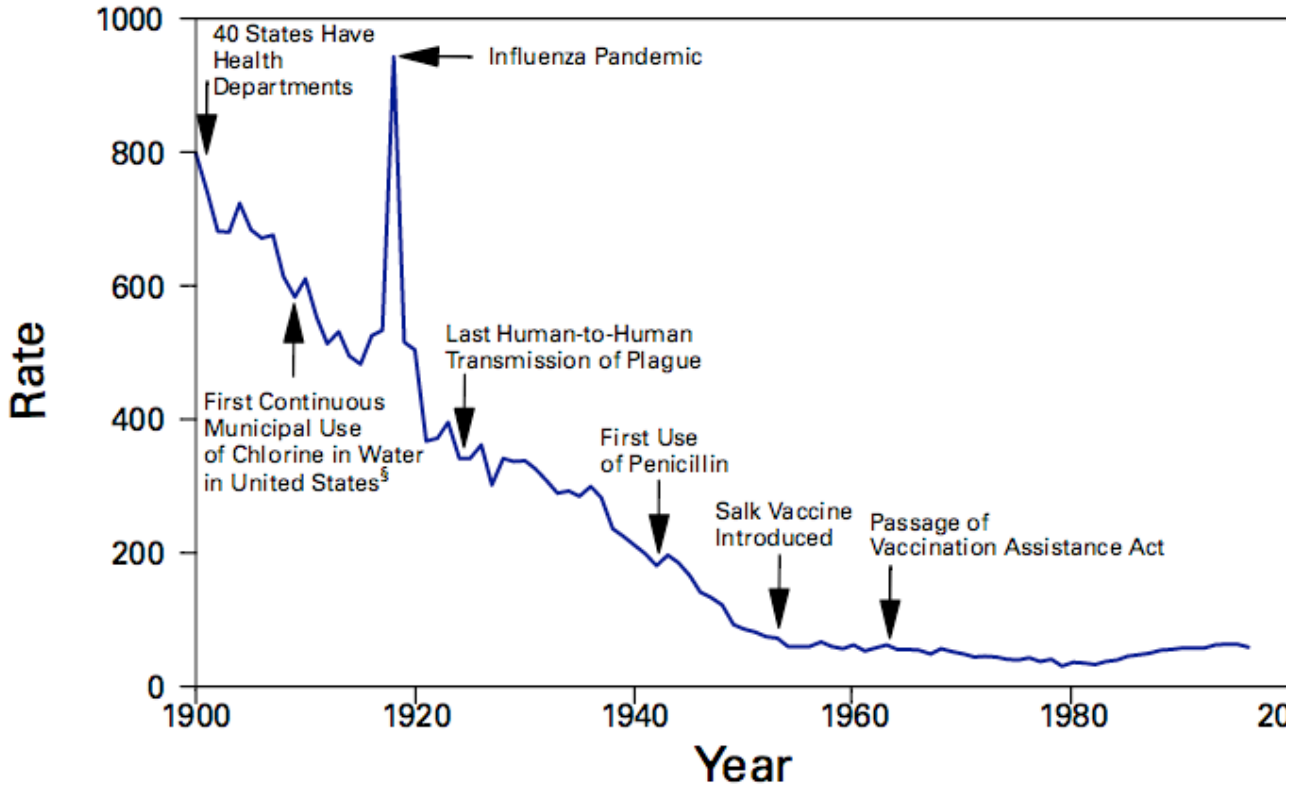


iii. Trend in Death Rates Due to Infectious Diseases (Figure 1.4)

Control of Infectious Diseases

Deaths from infectious diseases have declined markedly in the United States ing the 20th century (Figure 1). This decline contributed to a sharp drop in infant child mortality (*1,2*) and to the 29.2-year increase in life expectancy (*2*). In 1900, 3(of all deaths occurred among children aged <5 years; in 1997, that percentage only 1.4%. In 1900, the three leading causes of death were pneumonia, tubercul

FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–19



*Per 100,000 population per year.
†Adapted from Armstrong GL, Conn LA, Pinner RW. Trends in infectious disease mortali the United States during the 20th century. JAMA 1999:281;61–6.
§American Water Works Association. Water chlorination principles and practices: AWWA ma M20. Denver, Colorado: American Water Works Association, 1973.

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

* http://www.cdc.gov/mmwr/PDF/wk/mm4829.pdf

2. Classification and Nomenclature (12)

   A. Kingdom, Phylum, Class, Order, Family, Genus, Species

   B. Escherichia coli or *Escherichia coli* or E. coli *or E. coli*

      Always write names correctly on an exam !!

3. Cell Types (10)

   A. Prokaryotes

   B. Eukaryotes

4. Select Microbial Subdivision (10-15)

   A. Cellular

      i. Bacteria (Page 12)

      ii. Fungi (Page 13)

      iii. Algae (Pages 13-14)

      iv. Protozoa (Page 14)

      v. Helminths (Pages 14)

   B. Noncellular

      i. Viruses (Page 14)

      ii. Viroids (Page 14)

      ii. Prions (Pages 14-15)