Normal flora (P 406) Indigenous microbes act to crowd out pathogens and microbial antagonism. (Comment on “probiotics”) 
Notably: (p 408) 1) skin, 2) oral cavity, 3) respiratory, 4) small and large intestine, 5) vagina

Portal of Entry: (p 409) mucous membrane (including oral, conjunctiva, GI, GU, anus, respiratory), parenterally (penetration)

Portal of Exit: (p 420) via excretions or secretions: 1) respiratory droplets, 2) feces, 3) urine, 4) saliva, 5) parenteral, etc.

PATTERNS OF DISEASE: SIGNS, SYMPTOMS AND SYNDROMES (p. 414)

Disease can be either fulminating [“lightening’’] rapid onset

Pathogenicity: ability to cause disease

Insidious [“sit upon, snare’’] slow onset

Virulence: [“poison’’] severity of disease, affected by invasiveness and toxigenicity (factors: p 417)

Attenuation: [“to make thin’’] reduced virulence (by repeated subculture, transposal of virulence through abnormal host)

Stages of Disease: (p 419)

Incubation [“to lie upon’’] no signs or symptoms

Prodromal [“first run’’] redness, swelling, headache, aches and pains

Invasive S&S: fever (pyrogens), swollen lymph nodes, rashes, nasal congestion, cough, sore throat, pain, nausea, vomiting, diarrhea

Acme [“highest point’’] Full development of above signs and symptoms

Decline [“from slope’’] signs and symptoms decline

crisis: rapid reversal

lysis: slow reversal

convalescence: [“with strength’’] regain strength, tissues repaired

TRANSMISSION (p. 420)

DIRECT Person to person: handshake, intercourse, kissing HIV, herpes, gonorrhea, common cold, mono, etc

Droplet: dispersed by aerosols TB, influenza, measles, pertussis, strep throat

Animal to person: animal contact (bites, excretions, etc) rabies, leptospirosis, toxoplasmosis

INDIRECT Ingestion of contaminated food or water (Salmonella, Trichinella)

Fomites (inanimate) p: linens for pinworms, needles for hepatitis B, towels for Chlamydia

Vectors (animate) p 423: Mechanical : flies

Biological: malaria, yellow fever

Reservoirinfected animal cats for Toxoplasma, person (carrier) typhoid fever

Nosocomial: (p. 430): Staphylococcus: 34%

E. coli & Pseudomonas 32%

Clostridium difficile: 17%

fungal (Candida): 10%

DISEASES (p 424):

Communicable, contagious (easily communicable), non-communicable (tetanus)

endemic: steady low level of cases in an area

epidemic: significant increase within a given population

pandemic: significant increase world-wide

HOW IS DISEASE CAUSED?

Dose Some disease caused by single particle (common cold), others require massive numbers (certain Glutis or)

Bacterial traits:

adherence via adhesins, pili (p 410)

Colonization

Invasion

glycocalyx: inhibits phagocytosis (p 418)

Exotoxins, endotoxins (p 416)

Neurotoxins, enterotoxins

hemolysins, leukocidins, leukostatin (inhibit phagocytosis), hyaluronidase, coagulase, streptokinase, collagenase

Viruses:

cytopathic effect (CPE) cytocidal or noncytocidal

inclusion bodies

productive infection, non-productive infection