

DISEASE PROCESSES

15 August 1993, 16 Aug 95, 4 Aug 99, 14 Aug 00, 14 Aug 02, 16 Aug 04, 13Aug07, 18Aug08, 16Aug09,16Aug10, 11Apr13
 Black 2nd, p. 386-, Alcamo p. 521-, TFC 7th, 406-425, TFC 8th: 408-436, Bauman 2nd: 405-435

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
insidious [“sit upon, snare”] slow onset

Pathogenicity: ability to cause disease

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 congest, cough, sore throat, pain, nausea, vomiting, diarrhea

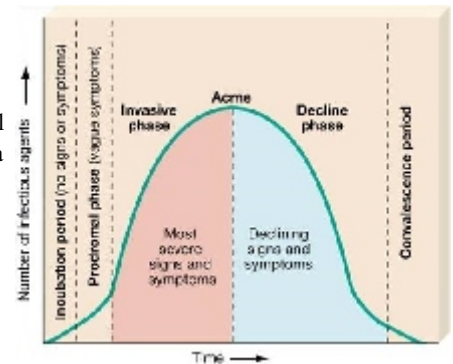
Acme [“highest point”] Full development of above signs and symptoms

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

Reservoir infected 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 GIitis)

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 noncytotoxic
 inclusion bodies
 productive infection, non-productive infection