Terms you should know:

epidermis  leukocidin  varicella
dermis  streptolysin  zoster
necrosis  streptokinase

**Streptococcus pyogenes**

Description: Gram-positive cocci in chains
Diseases: Impetigo, necrotizing fasciitis
Virulence factors: Exotoxins: leukocidin, streptolysin
Enzymes: hyaluronidase, streptokinase
Treatment: Antibiotics
Reservoir and spread: Human pathogen; usually enters through breaks in skin

**Clostridium perfringens**

Description: Gram-positive rods, forms endospores, obligate anaerobe
Diseases: Gas gangrene
Virulence factors: Exotoxin causing necrosis
Treatment: High doses of penicillin, oxygenation of tissue, removal of dead tissue
Reservoir and spread: Environmental reservoir (soil), spores contaminate food

**Mycobacterium leprae**

Description: Long, thin, Gram-positive rods, obligate aerobe, forms cords
Grows best below body temperature
Diseases: Leprosy
Virulence factors: Resistance due to thick outer layer of mycolic acids
Treatment: Long-term with multiple antibiotics: dapsone, rifampin and clofazimine
Reservoir and spread: Human reservoir; spread person-to-person and by nasal secretions

**Varicella-zoster virus (VZV)**

Description: Enveloped DNA virus in herpesvirus family
Diseases: Chicken pox (varicella), shingles (zoster)
Virulence factors: Ability to establish latent infection in nerve ganglia
Treatment: None; live, attenuated vaccine approved in 1995
Reservoir and spread: Human reservoir; spread by nasal secretions and fluid from lesions
Infectious 1-2 days before rash appears