Microbial Diseases of the Upper Respiratory Tract

- Upper Respiratory Tract (URT)
  - Oropharynx (mouth and throat)
  - Nasopharynx (nasal cavity)
  - Middle ear and Eustachian tubes
  - Sinuses
- Lower Respiratory Tract (LRT): Larynx, trachea, bronchii, alveoli, and pleura

Structures of the Upper Respiratory Tract
Upper respiratory tract infections result in inflammation of URT tissues

- **Pharyngitis** - Inflammation of the throat
- **Tonsillitis** - Inflammation of the tonsils
- **Sinusitis** - Inflammation of the sinuses
- **Epiglottitis** - Inflammation of the epiglottis
- **Otitis** - Inflammation of the ears
- **Rhinitis** - Inflammation of the nasopharynx
- **Laryngitis** - Inflammation of the larynx

**Streptococcal Pharyngitis**

- “Strep throat”
- In fact, most pharyngitis is NOT streptococcal
- Group A *Streptococcus* possess virulence factors to promote colonization and resist immunity
- Diagnosed by serology and culture
- Clinical concerns
  - Scarlet fever caused by erythrogenic toxin
  - Rheumatic fever, an autoimmune sequela
Diphtheria

- *Corynebacterium diphtheriae*
- Localized infection of the URT
- Disease due to systemic cytotoxin encoded on a prophage
- Formerly a significant cause of morbidity and mortality, today diphteria is controlled by universal vaccination
- Most cases in elderly with reduced immunity

Otitis media

- Inflammation of the middle ear
- Most common in young children
- Agents include
  - *Streptococcus pneumoniae*
  - *Haemophilus influenzae*
  - *Moraxella catarrhalis*
- Usually resolves without antibiotic therapy
Acute coryza

- The common cold
- 50% due to rhinoviruses, although number of possible agents probably >200
- Immunity may develop, but isn’t cross-protective
- Not only can nobody cure the common cold, nobody much knows how to prevent it!
- Treatment is of symptoms