• REMINDER: Comprehensive final exam is 12/14 at 2pm

• Infectious Diseases continued (Chapter 13)
  - Viral / Bacterial Infections
  - “Superbugs”
  - STIs
Viral Infections: To Treat Common Cold Symptoms:

- WARM fluids
- Rest
- No aspirin or acetaminophen
- Ibuprofen ok
- Call doc if gets more serious
Viral Infections: Prevention / Treatment of Influenza

- Flu shots advised (especially for high risk groups)
- Antiviral medications can shorten duration (but only effective in first 1-2 days)
• NOTE: Antibiotics are NOT effective against viruses – only bacteria! (This includes cold and flu!)
“SUPERBUGS”
Bacterial Resistance to Antibiotics
• Plasmid: Loop of bacterial DNA that may carry genes for antibiotic resistance
Bacterial Conjugation

1. Mobile Plasmid
2. Donor
3. Recipient
4. New Donor
• Bacteria divide very quickly! So, antibiotic resistance can spread rapidly.
Pssst! Hey kid! Wanna be a Superbug...?
Stick some of this into your genome...
Even penicillin won't be able to harm you...!

It was on a short-cut through the hospital kitchens that Albert was first approached by a member of the Antibiotic Resistance.
Common Bacterial Infections: Tuberculosis (TB)

- Infection of the lungs
- 30% of world’s population is infected – not all develop disease
Sexually Transmitted Infections (STIs)

- Pathogen that can be passed from one sexual partner to another
- If causes symptoms, becomes STD
- Up to 75% of sexually active people will contract an STI
Viral STIs: Human Papillomavirus (HPV)

- Most common STI in the U.S.
- Many show no symptoms
- Some develop genital warts
- Strong association with cervical cancer
- Diagnosis and treatment difficult
HPV Vaccine

- Gardasil – 1st vaccine to reduce risk of cervical cancer
- Given only to females
- Effective only if never before exposed
Viral STIs: Herpes

- Cause blisters on skin or mucous membranes
- HSV-1: Cold sores
- HSV-2: Blisters around genitals
- Contagious even when no blisters
- Rates have skyrocketed!
Herpes Treatment

- Cannot be cured
- Blisters reappear in times of stress, sun, temperature change
- Antiviral meds help symptoms (Valtrex, Zovirax, Famvir)
Viral STIs: Human Immunodeficiency Virius (HIV)

FACTS:

- 1/3 of new cases occur in heterosexuals
- Casual contact does NOT spread HIV
- Anal sex particularly risky
- Oral sex CAN spread HIV
- Other STIs increase risk of HIV
• HIV attacks white blood cells
Main symptoms of Acute HIV infection

Systemic:
- Fever
- Weight loss

Central:
- Malaise
- Headache
- Neuropathy

Pharyngitis

Mouth:
- Sores
- Thrush

Esophagus:
- Sores

Muscles:
- Myalgia

Liver and spleen:
- Enlargement

Lymph nodes:
- Lymphadenopathy

Skin:
- Rash

Gastric:
- Nausea
- Vomiting
AIDS Diagnosis

- Very low WBC counts
- One or more of:
  - Recurrent pneumonia
  - Tuberculosis
  - Invasive cervical or other cancers
  - Other viral / bacterial infections
- Antiretroviral drugs can delay or prevent onset of AIDS
Bacterial STIs: Chlamydia

- Most common STI in Riverside County
- Many have no symptoms
- Can lead to sterility
- Condoms decrease risk of infection
- Treatment = antibiotic
Bacterial STIs: Gonorrhea

• “The Clap”
• In men: thick pus oozes from penis, urination causes burning
• In women: 8 of 10 have no symptoms
• Leading cause of sterility in women
• Can develop into fatal infection
Bacterial STIs: Syphilis

- 4 stages:
  - Primary: chancre appears
  - Secondary: rash, fever, headaches
  - Latent: bacteria multiply & invade organs
  - Tertiary: organ failure, insanity, death
- First 3 stages treated with penicillin
Pubic Lice ("crabs") and Scabies

- Caused by infections of small arthropods
- Lice found in hair
- Scabies burrows under hair
- Both cause intense itching
- Treated with medicated creams / shampoos