Economic and political instability of the community

- Rate of sexual transmission of HIV depends upon the number of viral particles in genital secretion
- Primary risk group for HIV blood transmission are IVDUs

Upon contact, cells which are infected depends on the route of transmission:
- Needle sharing: lymph nodes and spleen (these are where the virus are filtered)
- Sex-oral: difficult transmission
- Kissing: higher possibility but none are documented yet

**EFFECTS of HIV INFECTION, VIRAL DYNAMICS**

- 3 major mechanisms for the loss of CD4 T cells in HIV infection
  - Direct viral killing of infected cells
  - Increased susceptibility to the induction of apoptosis in infected cells
    - Usually those that have undergone syncitia
  - Killing of infected CD4 cells by CD8 cytotoxic lymphocyte that recognize viral peptides

**DIAGNOSTIC PROCEDURES**

Tests for Antibody to HIV

- **ELISA**
  - most common screening test, sensitivity and specificity very close to 100%
  - With placental transmission, a baby will get a positive for the screening test because it carries HIV antibodies even if the baby doesn’t really have the virus.
  - Should be re-screened after a few months. At this time, only about 25% will show a positive result to the screening test.

- **Western blot**
  - most common confirmatory test; gold standard
  - two of three bands: p24, gp41, or gp160/gp120

- **Indirect IFA (Indirect Immunofluorescence Assay)**
- **RIPA (Radioimmunoprecipitation Assay)**
- **ELISA or chemoelctroluminescence should be done 3x as a screening test. If at least 2 of the tests are positive, Western blot is done for confirmation. If +, then the person is reported.**

- **Screening test- more likely to give false positive; supposed to catch all in the population**
- **Confirmatory test- very specific; but expensive; long procedure**

**Isolation and Cultivation of Virus**

**Detection of Virus and Virus-Infected Cells**

- Detection of HIV antigens by ELISA
- RT assay
- Western Blot
- Indirect IFA
- PCR
- In situ hybridization

**CLINICAL MANIFESTATION**

- **Acute viral syndrome (2-3 wks after exposure): fever, chills, rash, weakness**
- **Fever (96%), Fatigue (92%), Myalgia (72%), Rash (40%)**
- **Rash**
  - Measles-like feature; red
  - Trunk region
  - Evanescent rash disappearing in 2-3 days
- **Kaposi Sarcoma**
  - Painful rash
  - 1981 HIV epidemic- first noticed in MSMs in New York
  - Violaceous, tender lesions (reddish purple)
  - Rare and difficult to diagnose
- **Herpes 8**

Picture shows Kaposi sarcoma with wasting syndrome

- **Wasting Syndrome**
  - Chronic patients waste due to mobilization of fat stores
  - Abundance of viral and bacterial chronic infection → TNF, IL 1, IL6 → higher metabolism → mobilization of fat stores

- **Pneumocystis Carinii**
  - Extensive pneumonia shown grossly in lung autops
  - May produce cavitary change
  - Fine, powdery blush dot like bodies of carinii (demonstrated with Giemsa Stain)
  - Difficult to diagnose
  - Flaking at extremities e.g. elbow