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CDC Website

- http://www2a.cdc.gov/stdtraining/ready-to-use

Sexually Transmitted Infections

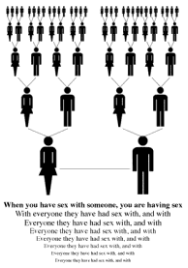
- "STI"…. "Venereal Infections"
  - *Infections transmitted most commonly through sexual contact.*
- An estimated 65 million Americans are currently infected with one or more STI's

STI Epidemic

- The CDC estimates that there are 19 million new cases each year.

– 50% of these new cases are in persons between 15-24 years of age.

- More then half of all people will have an STI in their lifetime.
- By age 24, at least one in two sexually active people are estimated to have been exposed to an STI.



Generalities

- STI's encompass more than 50 recognized organisms
- Scientists seem to find new variations of known organisms frequently
- STI's are the most common public health infections in adolescents

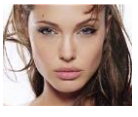
Generalities

- During The Last Two Decades:
- More adolescents are sexually active
- Rates of all STI's have increased

- Though condom and contraceptive use are improving, sexually transmitted infections among adolescents show age specific rates higher than any other age group.
- Adolescents who report condom use also report not using them every time with every partner.

Reasons Why STIs Are So Prevalent

- Many have no symptoms
- Changing trends in contraception
  - IE: Birth control pills



  - Earlier sexual activity
  - Casual attitudes
  - Greater # of partners
- Social stigma
- Denial*

High Risk Behaviors

- Unprotected sex
  - Vaginal, Anal or Oral
- Multiple Partners
  - Or persons who have had multiple partners!
- Alcohol or Drug use which reduces inhibitions

Common Myths

- If your partner doesn't have symptoms, you're safe
- You can always tell if you have an STI
- If your symptoms go away on their own, you're cured

Health Consequences of STI's

- Pelvic Inflammatory Disease (PID)
- Sterility
- Ectopic pregnancy
- Blindness
- Cancer (associated with HPV)
- Fetal and infant death
- Birth defects
- Mental retardation
- AIDS has a set of complications much broader than the other STI's

The Healthy Vagina

- Acidic with a pH of about 4.5
- Has a variety of bacteria, yeasts, and other micro-organisms which occur naturally in the vagina's acidic environment
- Has lactobacilli (good bacteria) normally which maintains natural acidity in the vagina and keeps other bacteria under control
- Makes a daily mucus-like discharge that may appear clear or slightly milky, depending on the time of a woman's monthly cycle

Vaginitis

- Vaginitis is an inflammation of the vagina
- Characterized by discharge, odor, irritation, and/or itching
- Vaginitis is often caused by infection which cause distress and discomfort
- Some vaginal infections are associated with more serious diseases
- Some are transmitted sexually, other such as yeast infections probably are not, depending on cause

Bacterial Vaginosis (BV)

- Organism/cause
- Non specific vaginitis
  - Change in vaginal environment

- Transmission/Cause
  - Sexual: tissue trauma
  - Risk Factors: douching & lack of vaginal lactobacilli

BV

- Symptoms:
  - Women

  - Thin, grayish white vaginal discharge, foul smelling discharge (fishy odor) especially after intercourse, burning with urination, and itching around the outside of the vagina.

  - Most women have no symptoms

BV

- Complications:
  - ✓ More susceptible to HIV
  - ✓ HIV positive women will spread HIV more easily to partner
  - ✓ Associated with increased infections rates for surgical procedures eg: hysterectomy abortion
  - ✓ If pregnant increases risk for preterm infant

Syphilis

- Agent = *Treponema pallidum*
- Caused by bacteria (Spirochete)
- Transmission: Contact infected skin or mucous membrane via rubbing & friction

Diagnosis

- Blood tests
- Non-treponemal screening
  Indirect test= test antibodies for tissue damage
  - VDRL (venereal disease research laboratory)
  - RPR (rapid plasma reagin)

- Treponemal (confirmatory)
  test directly for syphilis antibodies
  - ✓ DARK-FIELD MICROSCOPE: gold standard for diagnosis
  - ✓ Spinal fluid exam to diagnose neurosyphilis

Syphilis

Symptoms:

- 4 stages
  - Primary (10-90 days) Chancre {duration: 3-8 wk}
  - Secondary (1-12 months) skin rash {duration 1-2yr}
  - Latent (after secondary symptoms disappear) {through out life or progression to late stage}
  - Tertiary or Late {chronic without treatment }

Syphilis: chancre of penis (primary stage)

Syphilis

Management of Care

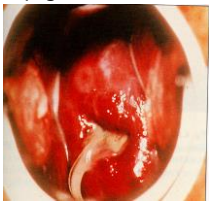
- Drug Therapy:
  Penicillin G benzathine (Bicillin) or
  aquesous procaine penicillin G

- Education: All stages should be treated
  if s/s persistent or reoccur re-treat
  - All sexual contact last 90 days must be treated

Gonorrhea

- **Organism**: Bacteria- Neisseria Gonorrhoeae

- Infects mucous membranes lined by columnar or cuboidal epithelial cells
- Lives in mucosal tissues (urethra, cervix, fallopian tubes, ovaries, rectum, throat (pharyngeal), eyeballs
- AKA "clap", "drip" or GC
- Transmission:
  semen & vaginal secretions
- Mother to infant during birth (vaginal delivery)



Diagnosis

- Men presumptive diagnosis
- Sexual contact with new or infected partner
- Followed by urethral discharge within a 2-5 days
  1. Painful swollen testicles
  2. Consistent dysuria
  3. Profuse purulent urethral discharge

(unusual for men to be asymptomatic)

Diagnosis

- Women are usually asymptomatic
- May have changes in menstruation
  1. Inflammation at the site of contact (cervix/urethra)
  2. Frequent urination
  3. Purulent vaginal discharge
     (Women usually asymptomatic)

- NAAT (nucleic acid amplification test)

Gonorrhea

- Complications:
- Men: prostatitis, urethral strictures, sterility from orchitis or epididymitis
- Women: PID, bartholin's abscess, ectopic pregnancy, and infertility
- Disseminated gonococcal infection (DGI)

Gonorrhea

- Management of Care: Is curative in early stages
- Antibiotic Therapy:
  Cephalosporin antibiotic
- Education
  Abstain from sexual intercourse & consumption of alcohol
- Newborns receive erythromycin ophthalmic oint.

Chlamydia

- Agent = *Chlamydia trachomatis*
- Caused by bacteria
- Very small
  - Lives and infects columnar epithelial (urethra, inside cervix, endometrium, fallopian tubes, eyelid and eyeballs)
  - Also affect rectum and throat

Chlamydia

Transmission:

- Semen, Vaginal secretions
- Women: infects urethra, cervix
  - 50% of women asymptomatic
  - Can have pain with urination or lower abdominal pain
  - Infection can spread to tubes and ovaries
  - Can cause infertility
  - Up to 10 days for cervical infections (females)
- Men: infects urethra, epididymis
- 10% of men asymptomatic for months
  - Can cause pain with urination
  - (white, cloudy, or watery discharge)
  - Swelling and pain of the testicles
  - 2-5 days incubation for urethral infections (males)

Semen | Vaginal | Anal

Diagnosis

- **Polymerase Chain Reaction (PCR) and Ligase Chain Reaction (LCR)**
  - Easy and non-invasive, quicker
  - PCR can be done on male urine samples, requires female sample from cervix;
  - LCR can use urine from men and women.
- **Transcription Mediated Amplification (TMA)**
- **Nucleic acid amplification tests NAATs** (recommended for non-symptomatic clients)
- **Old laboratory tests**

  These tests can be invasive, requiring cell samples
  - Cell Culture – "Gold standard"
  - Direct Fluorescent Antibody (DFA)
  - Enzyme Immunoassay (EIA)
  - Nucleic Acid Probe (Gen-Probe)

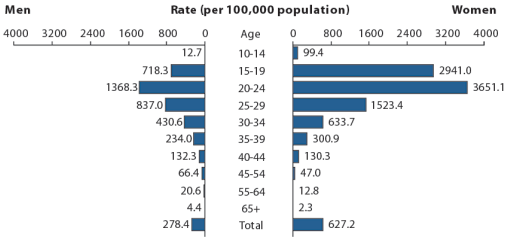
Complications

- Urethritis
- Epididymitis
- Proctitis
- Cervicitis
- Endometritis
- Salpingitis
- Perihepatitis
- PID
- Otitis media in infants
- Inclusion conjunctivitis
- Sterility

Management of care:

- **Recommended regimens**:
  - Azithromycin I g orally (single dose)
  - Doxycycline 100mg 2-3 times a day for 7days (not for use during pregnancy
- **Alternatives:**
  - Ofloxacin (not recommended for adolescents 17 or under or during pregnancy)
  - Erythromycin
  - Amoxicillin

Chlamydia — Rates of Reported Cases by Age and Sex, United States, 2014



Epididymitis due to Chlamydia – the swelling of this infection is seen above the right testicle

Herpes

- One of the most common Viral STI's
- Caused by a virus HSV
  - Type I: cold sores, fever blisters on lips (generally near face
  - Type II: Genital herpes
  - Both types can spread to other parts of the body
- Spread through direct skin to skin contact
- More common in women then men

Herpes

- Men and women: genital skin
  - Extremely painful lesions
  - Often no symptoms
- Women: cervix
  - Abnormal vaginal discharge
  - Often no symptoms
  - May infect newborns during delivery

Genital-Genital | Hand-Genital | Oral-Genital

Herpes

- Symptoms:
- 50% of infected people have no symptoms or mild symptoms
- Painful blisters appear 2-20 days after infection
- Recurrence can be frequent to infrequent

Diagnosis

Viral culture
- Fluid –filled herpes blister must be present (early in the outbreak)
- Fairly accurate

Antigen detection tests
- An active herpes sore must be present
- Can be done when sores begin to heal
- Unable to distinguish between HSV-1 and HSV-2

Blood test
- Antibody is detected –most older tests do not distinguish well between HSV-1 & HSV-2
- Type specific antibody tests are now available to aid the clinical diagnosis of suspect lesions and screen high –risk patients (HIV or HSV-2 contacts)
- Western blot used in research studies only and can distinguish between HSV-1 & HSV-2

Penis with vesicles (blisters) from genital herpes

External genital skin of female with herpes ulcers

Process of Herpes outbreak

Fluid-filled blisters

Open sores

Scabbed sores

Complications

- **In adults: no long term health complication:**
- Blisters can become infected
- Eye infections can develop
- Herpes meningitis & herpes encephalitis in rare cases
- People with suppressed immunity have longer- lasting and more frequent severe recurrences

- **During pregnancy**
  - Passed to baby during birth, rarely in utero
  - Greater risk if mother is having her first episode.
  - Additional risks of miscarriage, premature labor, growth retardation

Herpes

Management of Care

- **Collaborative:**
- Drug therapy
  - 1. Famciclovir (famvir)
  - 2. Acyclovir (Zovirax)
  - 3. valacyclovir (valtrex)
- Dosage and duration vary depending on type of episode (first vs. recurrent)

- Suppressive therapy treatment taken on a lower dosage to reduce the number of outbreaks and length of outbreak

  Can reduce frequency or recurrence as much as 75% among patients with frequent occurrences (6 or more /yr

Human Papilloma Virus (HPV) Genital Warts

- **Organism**: Virus (HPV)
  - Other names: venereal warts, condyloma or condylomata acuminata
  - Out of 25 genital types of HPV, 4 type are most common
    - Type 6 & 11 "low risk" – cause visible warts
    - Type 16 & 18 "high risk" – don't usually cause visible warts
- **Transmission:**
  - Direct skin-to-skin or mucous membrane to mucous membrane contact
  - The virus is not transmitted via blood or body fluids
- **Symptoms:** May be asymptomatic; warts range in size from small itchy bumps to large, cauliflower like growths
- **Incubation period for visible warts**

  range from 3 wks – 8mths to possibly yrs.

  Almost impossible to trace the source of infection

Diagnosis

- EXTERNAL
- Visual exam
- Acetic Acid Wash (not routinely recommended)
- Colposcopy
- Biopsy

- Cervical HPV
- Pap smear
- Hybrid capture II (used in research-a tissue sample DNA amplification test with sample collected in cervical area

Genital Warts

Genital Warts

Complications

Cervical Cancer

- Approx 95% of C.CA are now known to involve HPV (linked to type 16 & 18 "high risk types)
  - 2nd most common CA among women in the US
- HPV can lead to "dysplasia" or pre-cancerous cellular changes
- The vast majority of women with HPV will never develop C.CA. HPV found in cervix becomes undetectable within 2yrs in at least 90% of women (CDC 2003).
- Tens of millions of women are infected, only 16,000 dev CA each year
- Good News: Cervical cancer rates have fallen by approx 75% since pap screening programs

Management of Care

- Repeat treatments often necessary
- External warts: (pt. applied)
- Podifilox: liquid or gel for external warts only
-
- **Clinician applied TX:**
- Podophyllin: liquid applied over several visits external/internal warts
- Topical Trichloracetic Acid
- Cryotherapy: Tissue frozen with liquid nitrogen
- Surgical removal/Laser removal
- VACCINE: Gardasil

Important Facts

- HPV is one of the most common viral STI
  - In US over 5 million new cases/yr
  - At lest 20 million people are thought to have HPV
  - LA County alone 17,500 –35,000 new cases of HPV/yr
- Among sexually active adults
  - 50 – 75% acquire HPV in their lifetime while only 1% have visible genital warts
  - Peak age of onset 16–25 yrs old, 80% women will get HPV by age 50 yrs

Trichomoniasis Vaginalis

- Organism
  - Protozoa
- Facts
  - Most common curable STI among women
- Transmission
  - Vaginal mucosa and secretions
- **Symptoms**
  - Asymptomatic in 50% women and 90% men
  - Women
    - Ph
    - Discharge (thin or frothy, malodorous)
    - Color= yellow green or brownish –gray
    - Severe vulvar itching , edema and redness
- Complications
- **Treatment**
  - Metronidazole (Flagyl)
- Educational Messages
  - Prevention

Yeast Infection

- Candidiasis aka: moniliasis
- Organism: Candida albicans
  - a yeast like Fungus
- Transmission/Cause
  - change in vaginal ph
  - Sexual?
  - Change in hormone levels e.g in pregnancy
  - Use of antibiotics, DM, use of oral contraceptives
  - Use of douches
- Symptoms
  - Females: Cottage cheese-like discharge, itching, swelling, irritation/inflamed vulva & vaginal tissue
  - Males: rash, redness, burning, itching on penis

Yeast Infection

- Complications
- Diagnosis
  - Culture
- Treatment
  - Anti-fungal creams, oral fluconazole (Diflucan), nystatin available without prescription
  - NOTE: treatments are oil-based and may weaken latex condoms
- Educational Messages
  - Prevention
  - Seek medical attention
  - Recurrent infection that resist treatment are associated with DM or HIV

Toxoplasmosis= protoza

Others = syphilis, varicella, chlamydia

Group B hemolytic

Rubella = German Measles

Cytomegalovirus = a herpes virus

Herpes

Beta hemolytic stretococcus group B

A type of bacteria often found in the vagina. It can cause systemic infections in people with suppressed immune systems

Can cross the placenta & affect the fetus

Toxoplasmosis gondii organism is transmitted from mammals and birds. Can be in cat feces, improperly cooked meat, pork, lamb- proper hand washing, s/s –lymphadenopathy, transmitted to fetus by mom

Patient Education

- **Prevention**
  - Keep area clean
  - Avoid direct contact with sore
  - Abstain from sex when blisters & other symptoms are present
  - Use latex barrier, female condoms
  - Microbicides spermicides may provide additional protection
  - Talk to partner(s)
  - Limit # of partner(s)
- Other behaviors
  - If sores present get tested to R/O herpes
  - Start meds asap during outbreak
  - Notify sex partner
  - Pregnant women inform doctor if think they have herpes

Management of Care
NURSING ROLE

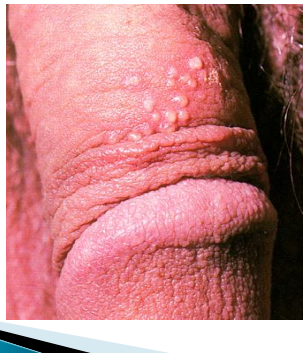
▪Assessment:
-obtain information
-Observe and know typical symptoms

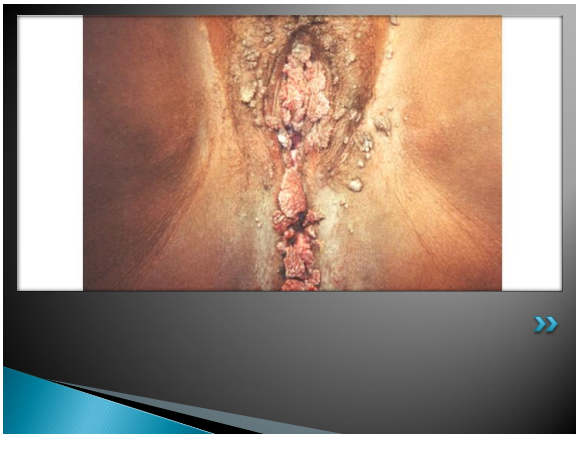
▪Nursing Diagnosis:
-knowledge deficit
-Risk for sexual dysfunction
-Anxiety
-Body image disturbance
-sexual dysfunction
▪Planning:
Patient goals

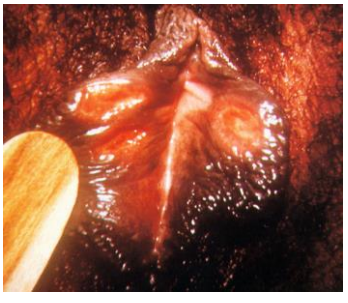
▪Implementation/Interventions:
Education
Careful consideration of sexual activity
Disease transmission knowledge and understanding disease process

▪Collaboration:

▪Evaluation:
Patient Outcomes
Evidence goals met
▪Report to Public Health Department







Herpes Resource and Referrals

- National Herpes Hotline (919) 361-8488
- LA Help (support group) (310) 281-7511
- LA County STD Program (800) 758-0880
- Herpes Zone www.herpeszone.com
- Herpes Web Ring
  www.antopia.com/herpes