Sexually Transmitted Diseases: An Overview

Topics to Be Covered

- Scope of problem
- Consequences of STDs
- Public health strategies
- Program level activities
Reproductive Tract Infections

• Endogenous infections
  - overgrowth of normally present organisms
• Iatrogenic infections
  - introduced by medical procedures
• Sexually transmitted diseases (STDs)
  - primarily introduced during sexual intercourse
Most Common STDs

Curable (mostly bacterial)
- Syphilis
- Chancroid
- Gonorrhea
- Chlamydial infection
- Trichomoniasis

Incurable (viral)
- HIV/AIDS
- HPV
- Hepatitis B
- Genital herpes
Curable STDs: Ulcerative

Syphilis

Chancroid

Cause genital sores and ulcers
Curable STDs: Non-Ulcerative

**Gonorrhea**
- **Women:** usually asymptomatic, possible vaginal discharge
- **Men:** usually urethral discharge

**Chlamydia**
- **Women:** usually asymptomatic, possible vaginal discharge
- **Men:** usually urethral discharge

**Trichomonomiasis**
- **Women:** vaginal discharge
- **Men:** asymptomatic
Global Incidence of Curable STDs

333 million new cases of curable STDs in 1995, ages 15-49

- **Trichomoniasis**
- **Chlamydia**
- **Gonorrhea**
- **Syphilis**
- **Chancroid**

**Source:** WHO, 1995.
Global Incidence of Incurable STDs

- HPV, herpes, HIV: at epidemic proportions
- HIV is of particular concern
  - 30 million infected worldwide in 1998
  - proportion of women with HIV rising
  - two thirds of infected live in sub-Saharan Africa; spreading rapidly in South and Southeast Asia and Eastern Europe

Factors Affecting the Spread of STDs

- Lack of gender equity
- Poverty and commercial sex
- Disruptions to traditional family life
- Inadequate health services
- Legal, cultural and religious obstacles to condom promotion and use
Consequences of STDs

<table>
<thead>
<tr>
<th>Women</th>
<th>Pelvic inflammatory disease (PID) (infertility, chronic pelvic pain, ectopic pregnancy)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cervical cancer</td>
</tr>
<tr>
<td></td>
<td>Adverse pregnancy outcomes</td>
</tr>
<tr>
<td>Infants</td>
<td>Eye infections, blindness, death</td>
</tr>
<tr>
<td>Men</td>
<td>Infertility, narrowing of the urethra</td>
</tr>
</tbody>
</table>

HIV/AIDS is fatal

There are also severe social and economic consequences
Other STDs Increase Risk of HIV Infection

- Presence of other STDs increases the risk of HIV acquisition
  - ulcerative STDs: 10 to 300 times per exposure
  - non-ulcerative STDs: 3 to 10 times per exposure
- In those already HIV-infected, presence of another STD aids HIV transmission

Source: Hayes et al, 1995; Dallabetta, 1996.
STD Control: Public Health Strategies

- Targeting core transmitters for prevention and treatment services
- Changing social norms
  - safer sexual behaviors
  - condom use
Public Health Strategies: Core Transmitters

Core transmitters can include sex workers, truck drivers, military men

core transmitters

people who have sex with both groups

general population
Public Health Strategies: Containing the Epidemic

Targeting core transmitters: most effective way to prevent STDs

Target population (Kenya)
500 sex workers
- 80% HIV+
  - 4 clients per day

500 low-income men
- 10% HIV+
  - 4 partners per year

Estimated HIV infections prevented per year
- 10,200
- 88

Public Health Strategies:
Changing Social Norms

- Mass media
- Influential community members
- Social marketing campaigns
- School-based activities

All serve to raise awareness and influence views and behaviors
Public Health Strategies: Encouraging Condom Use

Male STD Cases (Thailand)

- **Gonorrhea**
  - 1989, before “100% condom program”
  - 1993, after “100% condom program”

- **Chancroid**
  - 1989, before “100% condom program”
  - 1993, after “100% condom program”

- **Syphilis**
  - 1989, before “100% condom program”
  - 1993, after “100% condom program”

Public Health Strategies: STD Management

General strategies

Management in STD clinics
Condom promotion
Targeting core transmitters

Places with
- high STD prevalence
- available resources
should consider adding:

STD management services through FP/MCH clinics
Public Health Strategies: STD Control Challenges

STD Infected Population: A Conceptual Model

Program Level Activities

• Global, regional and national level
  - AIDS/STD awareness campaigns

• Clinic level
  - STD clinics
  - family planning and maternal and child health programs (FP/MCH)
FP/MCH Program Activities

Family planning programs need to consider the STD epidemic when:

• working with women
• reaching men
• reaching adolescents
Program Level: Women at Risk

- Low status may limit ability to negotiate safer sex, obtain information and receive health care.
- Vaginal surface is larger and more vulnerable to infection than penis.
- STDs are often asymptomatic in women and go untreated.
- Blood transfusions after delivery may expose women to HIV and hepatitis B.
Program Level: Reaching Men

- Reaching men is critical for effective STD prevention
- Family planning programs can reach men by:
  - appealing to their self interest in avoiding STDs
  - providing STD services to them
Program Level: Adolescents at Risk

Behavioral factors

- Multiple sex partners
- Lack of knowledge or negotiation skills
- Alcohol and drug use

Psychological factors

- Sense of invulnerability
- Willingness to take risks

B. Goldberg
Program Level:
Adolescents at Risk (cont’d)

Possible biological factors
• Cervical ectopy (women)
• Greater risk of infection at first exposure

Social factors
• Limited access to services
• Nonconsensual sex
Program Level: *Reaching Adolescents*

- Special techniques are needed to change behavior
- FP/MCH programs can:
  - work with schools and community organizations
  - offer accessible, nonjudgmental services
  - provide satellite clinics targeted to youth

*Promoting and providing condoms to youth are essential*
Provider Level: *STD Prevention*

- Counseling to assess risk and reduce risky behaviors
- Contraceptive choice in context of STD control
- Condom provision and promotion

C. Carnemark/World Bank
Provider Level: STD Management

- Diagnosis
- Treatment or referral
- Four Cs:
  - Counseling
  - Condoms
  - Compliance with treatment
  - Contacting partners
Summary: Importance of STD Control

- Serious global problem
- Strategic thinking at public health level is critical
- Family planning programs also need to be strategic
- STD services should be available to women, men and adolescents

J.C. Bruet/WHO
STD Prevention

Elements of STD Primary Prevention

- Education
- Counseling
- Contraceptive choices
- Condom use
Education: What Clients Need to Know

• Certain behaviors increase the risk of STDs
• Consistent and correct use of condoms can prevent STDs, including HIV
• How to recognize STD symptoms
• If STD is suspected, seek health care promptly
Counseling: Assessing Risk

- Questions for assessing client risk
  - multiple partners?
  - partner with symptoms?
- Clients at risk should receive in-depth counseling

Counseling should be nonjudgmental, confidential and individualized
Counseling: Skills Training

Clients need skills to:
• change their behavior
• negotiate risk reduction
• improve communication within relationships

Can involve practicing with friends and role-playing
Stages of Behavioral Change

- Aware of problem
- Motivated to change
- Try new behavior
- Evaluate change
- Sustain change

*Adapt counseling to stage of each client*

Other Counseling Approaches: Couples

- Can improve partner communication
- Increases condom use

United Nations

Other Counseling Approaches: Peer Groups

• Non-medical person provides information, counseling and possibly condoms to peers
• Used successfully with adolescents, sex workers and others
Contraceptive Choice and STD Prevention

Only barrier methods provide STD protection

- Male condoms offer best protection
- Female condoms also offer protection
- Spermicides may offer modest protection from bacterial STDs
Dual Method Use

Primary method for pregnancy prevention + Condom added for STD prevention
Dual Method Use: Alternative Approach

Primary method for STD and pregnancy prevention

Emergency contraception if condom not used, or if condom breaks or slips

if needed
Male Condom: Best Method for STD Prevention

Condoms are safe and widely available

- Consistent use
  - negotiation between partners
  - reaching men
- Correct use
- Condom promotion and access
Consistent Use: Negotiating Condom Use

- Insisting that male partner(s) use condoms may be difficult for women
- Benefits can be discussed
  - protect against pregnancy
  - can add to foreplay
  - can prevent premature ejaculation
Consistent Use: Reaching Men

- Research found that targeting men led to increased condom use with wives
- Advantages to men
  - partner protected from pregnancy
  - self and partner protected from STDs
  - condoms have no side effects and do not require clinic visit

Correct Use of the Male Condom

Open package carefully

Unroll condom all the way to base of erect penis before genital contact

After intercourse, remove penis from vagina while it is still erect, holding onto condom

Dispose of condom properly

Use a new condom for each act of intercourse
Condom Promotion and Access

Condom promotion can increase condom use

Annual Condom Social Marketing Sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Ethiopia</th>
<th>Brazil</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Condoms sold, in millions: 35, 30

Female Condom Provides Protection

- Safe, no side effects
- May protect external genitalia
- Laboratory studies: some protection against STDs, including HIV
  - Human study: protects against trichomoniasis
  - Access to both male and female condoms may increase overall condom use

Correct Use of the Female Condom

- Open package carefully
- Place inner ring inside vagina to cover cervix
- Outer ring covers external genitalia
- Be sure penis is placed inside condom
- After use, dispose of properly

*Use a new condom for each act of intercourse*
Resource Management: Male Condom

Programs providing STD services need:

- reliable supply of latex condoms
- proper storage facilities
- timely distribution of condoms

C. Gilmore/FHI
Resource Management: Female Condom

- Cost and limited supplies restrict availability
- Require less stringent storage conditions than male condoms
- Expiration: five years from manufacture
Summary: Family Planning Programs Can Provide Primary Prevention of STDs

- Provide information and counseling
- Include STD risk in discussions of contraceptive options
- Provide and promote condoms
- Work to improve consistent and correct use of condoms
Topics to be covered

- Introduction to STD management
- Syndromic management
- Four major STD syndromes
- Other STD management issues
STD Management: *Introduction*

STD management:
- includes diagnosis, treatment and the four Cs
- requires major commitment and resources
- can be offered through referral
Approaches to Diagnosis and Treatment

- Three approaches:
  - laboratory-based
  - clinical without laboratory support
  - syndromic management

- Approaches work only if infected person:
  - has symptoms
  - seeks health care
  - receives proper treatment
Laboratory-Based Approach

- Laboratory tests used to identify infectious agent
- Most precise method
- Requires substantial resources
- Treatment usually delayed
Clinical Approach without Laboratory Support

- Based on clinical judgment
- Least reliable method
- Single STD is typically identified and treated
Syndromic Approach

- Main STDs classified by clinical syndrome
- Algorithms guide diagnosis and treatment
- Clients treated for all major causes of syndrome
- Algorithms should be adapted to local STD prevalence
Syndromic Approach (cont’d)

- Can be used where laboratory services are not available
- Accuracy improves when supplemented with simple laboratory tests
- Useful only for persons with symptoms
Syndromic Approach: Strengths

- Clinical protocols are standardized
- Specialized equipment unnecessary
- Mid-level providers can use
- Diagnosis and treatment can be provided in a single visit
- In many cases, referral is not needed
Syndromic Approach: Weaknesses

- Requires staff training
- Results in overtreatment
  - requires larger supply of drugs
- Partners may be contacted unnecessarily
- Algorithms not equally accurate
## Syndromic Approach: Accuracy

Accuracy varies with each syndrome

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Accuracy of algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital ulcer</td>
<td>Good</td>
</tr>
<tr>
<td>Urethral discharge</td>
<td></td>
</tr>
<tr>
<td>Lower abdominal pain</td>
<td>Moderate</td>
</tr>
<tr>
<td>Vaginal discharge (vaginitis)</td>
<td></td>
</tr>
<tr>
<td>Vaginal discharge (cervicitis)</td>
<td>Poor</td>
</tr>
</tbody>
</table>
# Genital Ulcer Syndrome

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Genital sore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signs</td>
<td>Genital ulcer</td>
</tr>
<tr>
<td></td>
<td>Genital ulcer, sometimes with enlarged lymph nodes</td>
</tr>
<tr>
<td></td>
<td>Vesicular lesion</td>
</tr>
<tr>
<td>Possible STDs</td>
<td>Syphilis</td>
</tr>
<tr>
<td></td>
<td>Chancroid</td>
</tr>
<tr>
<td></td>
<td>Genital herpes</td>
</tr>
</tbody>
</table>
Genital Ulcer: Algorithm

Possible approach

Examine client complaining of genital sore or ulcer

- Ulcer present?
  - YES: Treat for syphilis and chancroid
  - NO: Vesicular lesions present?
    - YES: Treat for herpes
### Urethral Discharge Syndrome

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Penile discharge, with or without painful urination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign</td>
<td>Penile discharge</td>
</tr>
<tr>
<td>Possible STDs</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
</tbody>
</table>
Urethral Discharge: Algorithm

Possible approach

Examine client complaining of urethral discharge → Discharge confirmed? → YES → Treat for gonorrhea and chlamydia
## Vaginal Discharge Syndrome

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Signs</th>
<th>Possible Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal vaginal discharge</td>
<td>Abnormal vaginal discharge</td>
<td>Vaginitis:</td>
</tr>
<tr>
<td>Vaginal itching</td>
<td>Cervical discharge (speculum exam)</td>
<td>Trichomoniasis</td>
</tr>
<tr>
<td>Painful urination</td>
<td></td>
<td>Bacterial vaginosis (non-STD)</td>
</tr>
<tr>
<td>Painful sexual intercourse</td>
<td></td>
<td>Candidiasis (non-STD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cervicitis:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gonorrhea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chlamydia</td>
</tr>
</tbody>
</table>
Vaginal Discharge Syndrome: Vaginitis

- Common
- Usually causes vaginal discharge
- Major complications infrequent
- Easily treated
Vaginal Discharge Syndrome: Cervicitis

- Less common than vaginitis
- Sometimes causes vaginal discharge, but usually asymptomatic
- Can lead to major complications, if untreated
Vaginal Discharge: Algorithms

Local algorithms should consider:

- client’s STD risk factors
- prevalence of chlamydia and gonorrhea

Drug availability can also be considered
Vaginal Discharge: Algorithms (cont’d)

Possible approach

- Client complains of vaginal discharge
  - Assess for STD risk
    - High: Treat for vaginitis and cervicitis
    - Low: Treat for vaginitis
    - Between: Further testing and prevalence data
Vaginal Discharge: Algorithms (cont’d)

**Low STD prevalence population**

1. Client complains of vaginal discharge
2. Treat for vaginitis
3. If not cured, treat for cervicitis
4. If not cured, refer

**High STD prevalence population**

1. Client complains of vaginal discharge
2. Treat for vaginitis and cervicitis
3. If not cured, refer
**Lower Abdominal Pain Syndrome**

*Lower abdominal pain may be due to PID*

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Signs</th>
<th>Possible Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower abdominal pain</td>
<td>Lower abdominal tenderness</td>
<td>Gonorrhea</td>
</tr>
<tr>
<td>Pain during sexual intercourse</td>
<td>Cervical discharge (speculum exam)</td>
<td>Chlamydia</td>
</tr>
<tr>
<td>Vaginal discharge</td>
<td>Elevated body temperature</td>
<td>Anaerobic bacteria (non-STD)</td>
</tr>
</tbody>
</table>
Pelvic Inflammatory Disease (PID)

- Inflammation of a woman’s upper genital tract
- Usually results from infection traveling up from cervix
- Can lead to chronic pelvic pain, infertility, ectopic pregnancy, death
Lower Abdominal Pain: Algorithm

Possible approach

- Take history and examine client complaining of lower abdominal pain
- Rebound tenderness?
  - NO: Evaluate for PID
  - YES: Refer for surgical evaluation
Lower Abdominal Pain: Algorithm (cont’d)

- Pain when moving cervix during pelvic exam? 
  - or 
  - Cervical discharge on speculum exam? 
  - or 
  - Elevated temperature (if no pelvic exam possible)?

  Evaluate for PID

  **YES**
  - Treat or refer for PID

  **NO**
  - Follow-up if pain persists
STD Management: Other Issues

- Asymptomatic women
- Four Cs
- Managing resources
- HIV testing and counseling
- Screening and vaccination
Asymptomatic Women: Treatment

- Many women with gonorrhea and chlamydia are asymptomatic
- Notifying and treating partners of infected men is most effective
- Presumptive treatment is option for those at high risk
Asymptomatic Women: Screening

- Tools other than laboratory tests are unreliable
  - risk assessment: mixed research findings
  - leukocyte esterase dipstick test: at least as predictive as risk assessment

- Research on affordable reliable tests is ongoing

The Four Cs

All STD management approaches should emphasize the four Cs:

- Counseling and education
- Condom promotion
- Compliance with treatment
- Contacting partners for treatment
Managing Resources: *Drug Supply and Storage*

- Factors limiting drug availability:
  - cost and national policies
  - priorities for limited supplies
- Program managers need to consider:
  - local prevalence of STDs
  - availability of effective drugs
  - safe and secure storage
HIV Testing and Counseling

- HIV infection status important to know
- Antibody test can determine HIV status
- Counseling can help change behavior

Screening and Vaccination

- Screening and treatment of pregnant women for syphilis is effective and affordable.
- Screening for cervical cancer, associated with HPV, is appropriate when treatment is available.
- Hepatitis B vaccination is recommended in some countries for all newborns.
STD Clinical Management: Preliminary Steps

Before implementing clinical management of STDs, FP/MCH programs should:

- determine local prevalence of STDs
- determine proportion of clients at high risk
- assess staff expertise and available infrastructure
- assure training and supervisory systems
- assure drug supply and other resources
Summary: STD Management

- Syndromic approach
  - can be useful when laboratory tests are not available
  - has major limitations with cervicitis
- Algorithms should be designed based on local STD prevalence rates and resources
- STD management should emphasize the four Cs
Summary: Sexually Transmitted Diseases (STDs)

- Worldwide problem
- Public health strategies can help slow the spread of STDs, especially when targeted at core transmitters
- FP/MCH programs can offer STD prevention and possibly management services

P. Almasy/WHO