HIV and TB: Public health and community interventions

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Objectives

At the end of this session, participants should be able to:

1. Discuss evidence-based community and public health interventions related to TB and HIV

2. Explain how the HIV epidemic is effecting the global TB situation, and how the TB epidemic effects HIV.
Outline

• Epidemiology
• TB control strategies
• HIV
  – Prevention
  – Treatment
  – Community
  – Behavior change
Adults and children estimated to be living with HIV | 2012

Total: 35.3 million [32.2 million – 38.8 million]
About 6,300 new HIV infections a day in 2012

- About 95% are in low- and middle-income countries
- About 700 are in children under 15 years of age
- About 5,500 are in adults aged 15 years and older, of whom:
  - almost 47% are among women
  - about 39% are among young people (15-24)
2013 fact sheet

People living with HIV

- In 2012, there were 35.3 million [32.2 million–38.8 million] people living with HIV.
- Since the start of the epidemic around 75 million [63 million–89 million] have become infected with HIV.

New HIV infections

- New HIV infections have fallen by 33% since 2001.
- New HIV infections among adults and adolescents decreased by 50% or more in 26 countries between 2001 and 2012.
- New HIV infections among children have declined by 52% since 2001.
TB and HIV Globally

• At least **one-third** of the **34 million** people living with HIV are infected with latent TB
• The dual pandemics of TB and HIV are synergistic in the following ways
  – The **risk of developing active TB** in people living with HIV is between 20-30 times higher than those without HIV infection
  – Active TB infection **accelerates HIV progression**
  – TB is a **leading cause of death** among people living with HIV
  – HIV is the main reason for **failure to meet TB control targets** in high HIV settings
TB/HIV Epidemiology

• In 2012, here were 8.6 million new infections and 1.3 million deaths from TB
  – The rate of new cases is falling by about 2% yearly
  – Globally, 450,000 cases of MDR-TB and 170,000 deaths

• TB mortality rate had been reduced by 45% since 1990

• 13% of new TB infections occur in PLHIV
  – ~75% of TB infections occur in sub-Saharan Africa
Global trends in estimated rate of TB incidence, prevalence and mortality

Incidence
HIV-positive in red)

Prevalence

Mortality (excluding deaths among HIV-positive people)

e: Global Tuberculosis Report 2012, WHO
Control Framework for TB/HIV

• Global and country-level coordination of TB and HIV programs

DOT=directly observed therapy; LTBI=latent tuberculosis infection; IPT=isoniazid (INH) preventive therapy; CT= counselling and testing; OI=opportunistic infection; Rx=treatment; Ps=prophylaxis; HIV=human immunodeficiency virus
HIV testing for all people with TB in high prevalence regions

- In 2011, 40% of TB patients were tested for HIV and accessed HIV services
  - Up from 33% in 2010
The 5 I’s for HIV/TB

• 5 I’s
  – Intensive case finding
  – Isoniazid Preventive Therapy (IPT)
  – Infection control
  – Integration of TB/HIV services
  – Early Initiation of HAART
Intensive Case Finding

• Adults and adolescents living with HIV should be screened for TB with a clinical algorithm at every visit

Symptoms screen:
current cough, fever, weight loss or night sweats

• PLHIV need early diagnosis and treatment
Isoniazid Preventive Therapy

• What is it?
• How efficacious is it?
• Reduces the overall risk of developing TB by 33% (relative effect 0.67; CI 0.51–0.87)
  – TST positive, reduced by 64%
  – TST negative*, 14%
  – unknown TST status, 14%

* Not statistically significant
How many are getting IPT

• In 2011, 446,000 people living with HIV received IPT
  – Increased from 201,000 in 2010
• Out of 34 million PLHA
• =1.3%!!!
Infection Control

• For those living with TB
  – Cough hygiene
  – IPT for under 5’s

• Health care facilities
  – Administrative
  – Environmental
  – Personal Protective Equipment
Integration of HIV/TB services

Goals and objectives of the collaborative TB/HIV activities:
- Establish and strengthen the mechanisms for delivering integrated TB and HIV services
- Reduce the burden of TB in people living with HIV and initiate early antiretroviral therapy
- Reduce the burden of HIV in patients with presumptive and diagnosed TB

People living with HIV have an estimated 21 to 34 times greater risk of developing active TB than people without HIV infection.

In 2010, only 14% of TB patients were tested for HIV. The goal is 100% by 2015.

Some 350,000 people died of HIV-related TB in 2010, which makes TB responsible for one in five AIDS-related deaths.

Screening programmes should provide testing for both HIV & TB infections to everyone in the population every three years to save a million lives by 2015.
Early Initiation of HAART for PLHIV with TB

• TB is a WHO Stage 3 disease
• All co-infected people should be treated for TB immediately and HIV as soon as possible
• When to start ART....
  – CD4<50 start within 2 weeks
  – CD4>50 defer 8 weeks to reduce IRIS

Globally, 48% of the TB patients known to be living with HIV in 2011 were started on antiretroviral therapy (ART)
Community interventions for TB control

- Community volunteers (cough monitors, TB ambassadors) screen people in their homes for TB
- Link to care
- Ensure retention
- DOTS

PUBLIC HEALTH AND COMMUNITY STRATEGIES FOR HIV
Prevention vs Treatment

• Prevention
  – HIV testing
  – Voluntary Male Medical Circumcision
  – Prevention of mother to child transmission
  – PreP, PEP

• Treatment
  – Treatment as Prevention (TaP)
  – Option B Plus

• Community strategy
Alphabet soup of HIV testing

• VCT- Voluntary Counseling and Testing
• HTC- HIV testing and counseling
• HB HTC- Home-based HTC
• PITC- Provider initiated testing and counseling
• Universal HTC in ANC and MCH
Circumcision and HIV
VMMC

• Three randomized controlled trials undertaken in Kisumu, Kenya, Rakai District, Uganda, and Orange Farm, South Africa
• Medical male circumcision reduces the risk of female-to-male sexual transmission of HIV by approximately 60%
• TARGET: 80% coverage among men 15 - 49 years old in the priority countries –approximately 20 million circumcisions –
• COST: US$1.5 billion
• SAVINGS: US$16.5 billion by 2025
• INFECTIONS AVERTED 3.4 million*
• SO FAR: By the end of 2011, more than 1.3 million cuts

*80% coverage through 2025
eMTCT

• Elimination of mother to child transmission
• In 2009, there were an estimated 1.4 million HIV-positive, pregnant women
• 370,000 new HIV-infected children every year
• Current interventions can reduce transmission rates to <2%

Primary prevention of HIV in women
Prevention of unintended pregnancies
Prevention of mother to child transmission
Care for HIV infected women and children
<table>
<thead>
<tr>
<th>Option A: Maternal AZT and Infant daily NVP</th>
<th>Option B: Maternal Triple ARV Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother:</strong></td>
<td><strong>Mother:</strong></td>
</tr>
<tr>
<td>Antepartum AZT (from as early as 14 weeks gestation)</td>
<td>Triple ARV from 14 weeks until one week after all exposure to breast milk has ended</td>
</tr>
<tr>
<td>• sd-NVP at onset of labour*</td>
<td>• AZT + 3TC + LPV/r</td>
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<tr>
<td>• AZT+3TC during labour and delivery*</td>
<td>• AZT + 3TC + ABC</td>
</tr>
<tr>
<td>• AZT+3TC for 7 days postpartum*</td>
<td>• AZT + 3TC + EFV</td>
</tr>
<tr>
<td><em>sd-NVP and AZT+3TC can be omitted if mother receives &gt;4 weeks of AZT antepartum</em></td>
<td>• AZT + 3TC (or FTC) + EFV</td>
</tr>
<tr>
<td><strong>Infant:</strong></td>
<td><strong>Infant:</strong></td>
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<tr>
<td>Breastfeeding infant</td>
<td>Breastfeeding infant</td>
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<tr>
<td>Daily NVP from birth until one week after all exposure to breast milk has ended</td>
<td>Daily NVP from birth to 6 weeks</td>
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<tr>
<td>Non-breastfeeding infant</td>
<td>Non-breastfeeding infant</td>
</tr>
<tr>
<td>AZT or NVP for 6 weeks</td>
<td>AZT or NVP for 6 weeks</td>
</tr>
</tbody>
</table>
Option B+

• Use of Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants

• Advantages of Option B+
  – Simplification of regimen and service delivery
  – Harmonization with ART programmes
  – Protection against MTCT in current AND future pregnancies
  – Avoids stopping and starting of ARVs
  – Prevention of transmission in discordant couples
  – Improved clinical outcomes for women
Pre-exposure Prophylaxis

• Use of anti-retrovirals to prevent acquisition of HIV in targeted populations
  – MSM, sex workers, IDU, discordant couples
  – MARPs- fisherfolk, truck drivers
  – Special Forces

• Most success using oral PrEP with Truvada (TDF+FTC)

• Can PrEP be scaled to public health level for high prevalence regions?
Post-exposure Prophylaxis

• Use of anti-retroviral therapy after an exposure to HIV
• Health care workers
• Rape victims
• Sexual contact
Treatment as Prevention
HPTN 052

- Sero-discordant couples from 18 sites in eight countries in three continents
- HIV-positive partner had to have a CD4 count between 350 and 550 cells/mm$^3$ at baseline
- Randomised immediate ARV versus delayed ARV (until their CD4 count below 250 cells/mm$^3$)
HPTN 052 Summary Results

- 1763 discordant couples
  - 893 early treatment: 1 linked HIV transmission
  - 882 delayed treatment: 27 linked HIV transmissions

Early therapy reduced linked transmissions of HIV by 96%
Task Shifting

• WHO described approach to get more “mid-level” health care workers doing the work of doctors in diagnosing and treating HIV and TB
• Frees up doctors for more complex patients
• Task shift at every level. Nurse duties pass to Aids, and filling some gaps by getting patients involved.
Training
Classroom Sessions
IDI NURSES TRAINING
Community Strategy

- Utilizing community health workers to support HIV care and TB
- Volunteers versus remuneration
- Stigma, privacy
Prevention
The sexual network does not stop with you!
HIV spreads like wild fire in sexual networks!
To live a good life, get off the sexual network
Not evenSugar Daddies can stop her!

Brave
Focused
Victorious

Cross Generational Sex stops with you.

Say no to Sugar Daddies.
Would you let this man be with your teenage daughter?

So why are you with his?

Cross Generational Sex stops with you.
...aaah, now for the drugs, I think you know the way to JB's!!!

NO DOCTOR!!!
It's Gov't policy to get the essential drugs free, & not to get them from your clinic!!!!
Other community interventions

- Psychosocial support
  - Mentor mothers, counseling, partner involvement, support groups
- Home visits
- Education
- Mobilization
- Income generating activities (IGA)
- Incentives
- Focus group discussions
- Community leader influence
Poverty
Women’s Issues

- Livelihood
- Bride Price
- Forced Marriage
- Forced Sex
- Polygamy
- Prostitution, Transactional Sex
- Rape, Abuse
- Young women/old men
- Subjugation
“For much of my adult life, I have felt that the struggle for gender equality is the toughest struggle of all, and never have I felt it more keenly than the battle against HIV/AIDS. The women of Africa: they run the household, they grow the food, they assume virtually the entire burden of care, they look after the orphans, they do it all with an almost unimaginable stoicism, and as recompense for a life of almost supernatural hardship and devotion, they die agonizing deaths........”

S. Lewis
MEN

• “AIDS has brought into brutal relief the predatory sexual behavior of adult males, and the terrible consequences of intergenerational sex...the terrible vulnerability of women whom have neither sexual power or sexual autonomy...the levels of sexual violence, the levels of rape...inexorably transmit the virus” S.Lewis
BeadforLife
Eradicating Poverty
One Bead at a Time
Behavior Change

• Uganda
  – ABC’s of HIV prevention
• Thailand
  – 100 percent condom-usage program promoted condom use in brothels
• Australia
  – broad public-awareness campaigns, focused behavioral interventions for gay men, public-sector support for needle and syringe exchange, and voluntary HIV counseling and testing
• Targeted interventions
  – Sex workers: increased condom use with clients
  – MSM: reduced the odds of reported unprotected anal intercourse by 27 to 43%
  – IDU-nonparticipants in harm-reduction programs were 3.5 times more likely to become HIV-infected
  – Youth
Approaches to HIV and TB lead to better health care systems

• Shift from episodic to continuous care model
• Need to build infrastructure to provide HIV and TB care.
  – Electricity, plumbing
  – Record keeping
  – Staffing
  – Need to deal with corruption
• New thinking for helpful interventions from resource abundant “donors.”
Summary

• Public health and community strategies for TB and HIV are diverse and complex
• The best approach depends on local epidemic, resources, and political will
• Comparative cost-effectiveness is key in an era of reduced funding