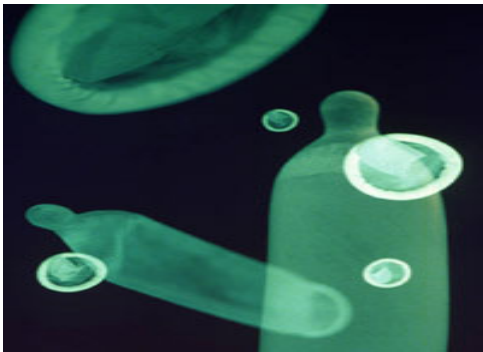


Effective HIV & AIDS prevention strategies



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Structure of the presentation

- Evidence and types of evidence in HIV prevention
- Principles and strategies for evaluating effectiveness of HIV prevention strategies
- HIV/AIDS prevention strategies
- Levels of effectiveness of HIV prevention strategies
- Effective HIV prevention strategies.



Evidence

Evidence refers to “**facts** or testimony in support of a conclusion, statement or belief” and “something serving as **proof**”.

Proof is the evidence that produces belief in the “truth” of a proposition or argument.

- Maths uses number calculations to prove that $2 \times 2 = 4$,
- The Law uses witnesses and other forms of evidence to prove guilt beyond reasonable doubt. “*Not guilty until proven guilty*”
- Epidemiology uses quantitative data to determine association between variables.
- Systematic reviews use Randomised Controlled Trials to provide evidence of effectiveness of HIV prevention strategies.



Types of evidence

1. Research that describes risk-disease relations and identifies the magnitude, severity and preventability of HIV/AIDS. It points to the fact that “**something must be done**”

2. Evidence can help to determine that “**this should be done**” Brownson et al

3. Evidence on “**how something should be done**”. Includes information on the design and implementation of a prevention strategy; the contextual circumstances in which the strategy was implemented and information on how the strategy was received. Rychetnik et al 2004



Principles of evidence-based practice

- 1) It is important to know whether AIDS prevention strategies are effective and **do more good than harm**.
- 2) The **benefits and costs** of AIDS prevention strategies should be described and evaluated, so that they can be weighed against other options for the use of resources.
- 3) People who make (or are affected by) evidence-based decisions about AIDS strategies should be aware of the **strengths, limitations and gaps** in available evidence



HIV/AIDS prevention strategies

- ABC/ABY or DRC
- KAPB strategies, including peer education
- Condom use
- HIV Voluntary Counselling & Testing (VCT)
- Treatment of opportunistic infections and STIs
- Dual therapy use for PMTCT,
- Antiretroviral (ARV) treatment for AIDS disease
- INH prophylaxis (IPT),
- Male circumcision (MC)
- Microbicides?



Efficacy and effectiveness

- **Efficacy** is the protection the user would receive under “ideal” conditions, and depends primarily on the properties of the device (condom) as tested in controlled studies among a sample of people.
- **Effectiveness** is the protection the user would receive under “actual” or “reallife” conditions, and depends on the properties of the device (condom) and the behaviors of the user (NIAID, 2001)
- Both constructs are important for evaluating HIV prevention strategies.



Level of effectiveness of HIV prevention strategies

An HIV prevention strategy can be described as:

1. **Effective** e.g. MC is 65% effective;
2. **Not effective** e.g. Some ARV drugs are not used because they are not effective
3. **Possibly harmful** e.g. Nonoxynol-9 (N9) microbicide

Effectiveness of male circumcision as an HIV prevention strategy



“There is compelling evidence that male circumcision is 65% effective in reducing the risk of acquiring HIV in circumcised men...”

RCTs - in South Africa, Uganda and Kenya – were the “gold standard” for obtaining evidence of effectiveness.



Effectiveness of HIV prevention strategies!

Should HIV prevention strategies be considered:

- ***useful** until proven ineffective? or*
- *assumed to be **useless** until proven effective?*

Examples:

- Abstinence and Be Faithful (AB) interventions
- Femidom,
- Nonoxynol-9 (N9), and new microbicides being tested
- Nevirapine use for PMTCT,
- AIDS vaccines,
- INH prophylaxis (IPT),
- Male circumcision

Effective strategies for preventing sexual transmission of HIV

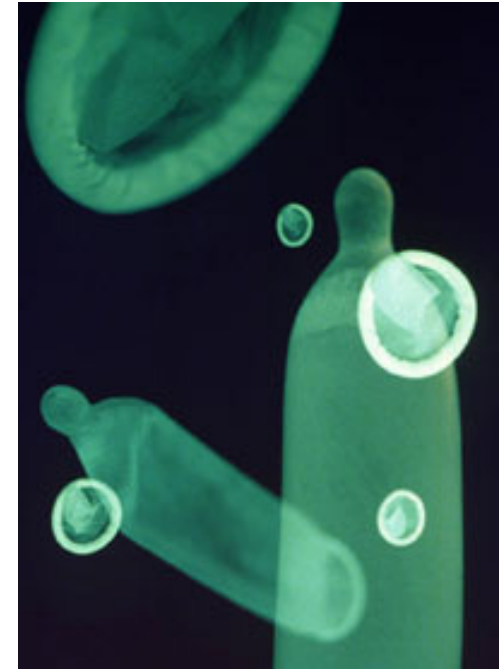
- It is estimated that the **female condom** is 94-97% effective in reducing the risk of HIV infection if used correctly and consistently(6)
- Programs promoting **abstinence** were found to be ineffective at increasing abstinent behavior and were possibly harmful;
- **Male circumcision** has been found to be effective in reducing the risk of HIV transmission in circumcised men.



Effective strategies for preventing sexual transmission of HIV

- Male condom distribution with peer-led education on **safe sex behaviors for FSWs**
Merson et al
- Male condom distribution with peer outreach and **treatment of STIs for FSWs**
Merson et al
- Male condom distribution for clients of FSWs, particularly men such as **truck drivers, factory workers** and **military workers**
Merson et al
- When male condoms are used correctly and consistently, they are **80-95% effective** in reducing the risk of HIV infection **(2-5)**

(2) Weller S, Davis K. (2004): (3) Hearst N, Chen S., (2003) (4) Pinkerton SD, Abramson PR. (1997) (5) Holmes KK, Levine R, Weaver M, 2004.



Weapons of mass protection!

Effective strategies to decrease HIV transmission among HCWs and the community

- Routine HIV **antibody screening** interventions
- Improving compliance with **universal precautions**
- **Safe** and appropriate **use of injections**
- Strengthening the **quality of blood for transfusions**



Strategies for preventing parenteral transmission of HIV in HCWs

- Improving compliance with **universal precautions**, making available adequate and accessible barriers (gloves) to all HCWs and sufficient time for HCWs to use them (Levin)
- The **safe and appropriate use of injections**, including provision of single-use syringes , training and public education are effective at reducing transmission through unsafe medical injections (Dziekan)
- Strengthening the **quality of blood for transfusions** through deferring high-risk donors, recruitment of volunteers and reducing unnecessary transfusions (WHO Commission on Macroeconomics and Health)



Strategies for preventing transmission of HIV in IDUs

- Evidence strongly supports the effectiveness of **needle exchange programs** in reducing HIV incidence amongst IDUs, though they do not decrease drug use (Hurly et al)
- **HIV/AIDS risk reduction interventions** for clients enrolled in drug abuse treatment programs are effective for decreasing sexual risk behavior, improving risk reduction skills and decreasing risky injection practices (Prendagast et al.)
- **Outreach interventions** are effective in reaching out-of-treatment IDUs and improve drug and sex risk behaviors...(Coyle et al.)





Strategies for pMTCT of HIV

- Short-course monotherapy with **Zidovudine** has been shown to be effective for decreasing perinatal HIV transmission. **Nevirapine** is cheaper and is given as single-dose to mothers and babies (Brocklehurst, Volmink)
- Elective **Caesarean delivery** and **breastmilk replacement** seems to be effective in developed countries.
- Elective use of **Caesar versus vaginal birth** has proven effective in reducing perinatal transmission (Brocklehurst, Volmink)
- The use of **formula feedings** rather than breastfeeding has proven effective to decrease HIV transmission in infants (WHO Collaborative Study Team)

The AIDS epidemic has taught us to be innovative and to invent new ways of doing things. We now have evidence of HIV prevention strategies that work!



Picture source: Naidoo D (2007). Science, Technological and Innovation – A Strategic Imperative for South Africa

However, despite our innovation, inventiveness and compelling evidence of effective strategies, the “killer virus” is still chasing and killing us!



Picture source: Naidoo D (2007). Science, Technological and Innovation – A Strategic Imperative for South Africa



Conclusion

We should increase our speed and innovativeness to:

- **identify** HIV/AIDS prevention strategies with evidence of effectiveness or efficacy,
- **fund** them
- **implement** them carefully and meticulously
- **evaluate** them, to ensure they are effective in the chosen target groups.
- If necessary, **adapt** them to local conditions.