HIV prevention: Where is the evidence of interventions that work?

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Acknowledgements

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• A few additional slides are also based on Prof Geoffrey Setswe’s presentation to the SBI Workshop which was in Durban on 31 March 2009 entitled Is there evidence that social, behavioural and structural interventions work in reducing HIV/AIDS?
In this presentation

1. Introduction
2. What is evidence and levels of evidence in HIV prevention?
3. HIV prevention interventions
   3.1. Biomedical HIV prevention interventions
   3.2. Behavioural HIV prevention interventions
   3.3. Structural HIV prevention interventions
4. Summary of HIV prevention interventions that work
5. Conclusion
1. Introduction

• **Remarkable advances** in the molecular biology of HIV and major therapeutic discoveries in the past 28 years of the epidemic.

• Many interventions have been developed and implemented – some were tested for evidence of efficacy or effectiveness and some were not.

• In 2009, **we are not sure which interventions work!** We need to identify and use **best and good evidence** HIV prevention interventions that work.

• **Policymakers, implementers, researchers, funders and the community** - all need evidence that an HIV prevention intervention works…

• **We present evidence of HIV prevention interventions that work** and also present their **level of effectiveness or efficacy**.
2. What is evidence?

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

- Proof that something works.

- The Law uses witnesses and other forms of evidence to prove guilt beyond reasonable doubt.

- Epidemiology uses \textit{p-value} to show level of significance e.g. \( p \leq 0.05 \) says we are 95\% confident that the observed difference is not due to chance.
## Proposed levels of evidence

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>% Effectiveness or efficacy (in RCT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Evidence</strong></td>
<td>80% +</td>
</tr>
<tr>
<td>Good evidence</td>
<td>60-79%</td>
</tr>
<tr>
<td>Promising evidence</td>
<td>30-59%</td>
</tr>
<tr>
<td>NO Evidence</td>
<td>0-29%</td>
</tr>
</tbody>
</table>
3.1. Biomedical HIV prevention interventions

3.1.1. Male circumcision (MC)

3.1.2. Highly Active Antiretroviral Therapy (HAART)

3.1.3. Prevention of mother to child transmission (PMTCT)

3.1.4. Condoms (Male and Female)

3.1.5. Treatment of Sexually Transmitted Infections (STI)

3.1.6. Microbicides and cervical barriers

3.1.7. HIV vaccine
3.1.1. Male Circumcision (MC)

- RCTs on MC in South Africa, Uganda, and Kenya\(^1\): “There is **compelling evidence** that MC is **65% effective** in reducing the risk of acquiring HIV in circumcised men…”

- A **Cochrane review** assessed data from trials in SA, Uganda, and Kenya between 2002 and 2006 that enrolled 11,054 males said that research on the effectiveness of MC for preventing HIV in heterosexual men is conclusive. Reviewers concluded that **no further trials are required to establish that HIV infection rates are reduced in heterosexual men for at least the first two years after circumcision**\(^2\)

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3.1.2. Highly Active Antiretroviral Therapy (HAART)

- RCTs on HAART* reported 60% to 80% reductions in new AIDS illnesses, hospitalizations and deaths.

- A meta-analysis** of 54 antiretroviral clinical trials has demonstrated that:
  - Using one antiretroviral reduced progression to AIDS or death by 30% against placebo.
  - Using two antiretrovirals reduced progression to AIDS or death by 40% against one antiretroviral.
  - Using three antiretrovirals reduced progression to AIDS or death by 40% against two antiretrovirals.


**Palella et al. (1998) Declining morbidity and mortality among patients with advanced HIV infection. NEJM 338:853-860
3.1.3. Preventing Mother-To-Child Transmission (PMTCT) of HIV

ARV and Perinatal Transmission in Africa, 1995-2006

Transmission rates are as high as 35% when there is no intervention and below 5% when antiretroviral treatment and appropriate care are available.
3.1.4. Condoms

- A meta-analysis commissioned by UNAIDS* = male condom use is 90% effective in preventing HIV transmission.
- “Evidence from Family Planning programs over many years makes it abundantly clear that the condom is a safe and relatively effective method. . .”
- Based on laboratory and clinical evidence, the US FDA approved the female condom as 94-97% effective in reducing the risk of HIV infection, if used correctly and consistently**.

**AVERT, “The Female Condom” fact sheet, available online at http://www.avert.org/femcond.htm
3.5. STI treatment

- Evidence from a cluster RCT in Mwanza, Tanzania, suggests that improved STI treatment services were shown to reduce HIV transmission by about 40%.

- Two trials (Mwanza & Rakai) indicate no evidence for substantial benefit from STI treatment of all community members.

- Cochrane Reviewers concluded that limited evidence from RCTs indicates that STI control serves as an effective HIV prevention strategy.


3.1.6. Microbicides and cervical barriers

• Studies of early-generation microbicides have failed to detect a prevention benefit, and disappointing results were reported on the HIV prevention potential of female diaphragms.

• HPTN 035: A multi-centre clinical trial conducted at 7 sites (6 in Africa) evaluated the safety and effectiveness of two candidate microbicides, BufferGel and PRO 2000 with 3,099 participants. PRO 2000 was 30% effective compared with no gel but BufferGel had no detectable effect on preventing HIV infection.

• Topical microbicides have not performed well in human HIV prevention studies, with 10 trials of surfactant and polyanionic compounds yielding negative results.
3.1.7. HIV vaccine

- The Thai Phase III HIV vaccine clinical trial (RV 144), tested the “prime-boost” combination of two vaccines: ALVAC® HIV vaccine (the prime), and AIDSVAX® B/E vaccine (the boost). The vaccine combination was based on HIV strains that commonly circulate in Thailand. The trial demonstrated that the vaccine regimen was safe and modestly effective in preventing HIV infection. The results show that the prime-boost combination lowered the rate of HIV infection by 31.2%*

HIV Vaccine Trials Network (HVTN) launched the first large-scale study to evaluate a candidate clade B HIV vaccine. The phase IIb or "test of concept" efficacy trial involved 3,000 participants at 5 sites in South Africa. Unfortunately, the trials were halted in September 2007 owing to the vaccine’s lack of efficacy.

## Summary: Evidence of Biomedical HIV prevention interventions

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>Interventions</th>
<th>% Effectiveness or efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Evidence</strong></td>
<td>Male Condoms, Female Condoms, PMTCT [Dual &amp; triple therapy]</td>
<td>80-95% [Natural experiment] 94-97% [Natural experiment] 92-98% [RCTs]</td>
</tr>
<tr>
<td><strong>Good evidence</strong></td>
<td>HAART, Male Circumcision</td>
<td>60-80% [RCTs] 65% [3 RCTs]</td>
</tr>
<tr>
<td><strong>Promising evidence</strong></td>
<td>HPTN 035 (PRO 2000), STI treatment, RV 144 Thai vaccine trial</td>
<td>30% [1 RCT] 40% [1 RCT] 31.2% [1 RCT]</td>
</tr>
<tr>
<td><strong>NO evidence</strong></td>
<td>HIV Vaccine Trials Network (HVTN), Early-generation microbicides &amp; topical microbicides</td>
<td>No efficacy [RCT] Failed [RCTs] and negative results [10 RCTs]</td>
</tr>
</tbody>
</table>
# Prevention of the Sexual Transmission of HIV-1: Results from RCTs

<table>
<thead>
<tr>
<th>Intervention</th>
<th>RCTs Completed</th>
<th>RCTs Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior change</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Circumcision</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Diaphragms</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Microbicides</td>
<td>9.5</td>
<td>0</td>
</tr>
<tr>
<td>PrEP</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>STD Treatment</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Vaccines</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

1) RCT results are one measure of success
2) 15 RCTs in progress: new results each year

*Wasserheit, WHO, 2007*
3.2. Behavioural HIV prevention interventions

3.2.1. Abstinence-only and ABC interventions

3.2.2. Voluntary Counselling & Testing (VCT)

3.2.3. Stepping Stones counselling intervention

3.2.4. Concurrent sexual partnerships

“Behavioral HIV prevention works. Some have been pessimistic that it’s possible to reduce HIV risk behaviors on a large scale, but this concern is misplaced”

Dr. Helene Gayle, co-chair of the Working Group
3.2.1. Abstinence-only and ABC interventions

A Cochrane review of 13 RCTs comparing abstinence-only programs to various control groups in the US concluded that abstinence-only programs do not appear to reduce or exacerbate HIV risk among participants in high-income countries, although this evidence might not apply beyond US youth. Of the 13 trials, 7 trials reported incidence of vaginal sex.

“It is time to scrap the ABCs and elevate the debate on HIV prevention beyond the incessant controversies over individual interventions. Small scale, isolated HIV prevention programs, however effective, will not bring the AIDS epidemic under control...Policy makers, donors and advocates need to demand national prevention efforts...ABC infantalizes prevention, oversimplifying what should be an ongoing, strategic approach to reducing incidence.”

Collins et al, AIDS, 2008

3.2.2. HIV Counseling and Testing (HCT)

- Meta-analysis of 11 studies of the impact of counseling and testing for PLWH/A*
  - 68% reduction in high risk sexual behaviors with partners not already HIV+ (95% CI: 59% - 76%)
  - Very similar findings for men and women

- Examining pool of 27 studies, a meta-analysis** found no significant impact of “counseling and testing” bundle on behavior relative to the untested


3.2.3. Stepping Stones counseling intervention: Impact on HIV-1, HSV-2 & Behaviour

- Stepping Stones, a 50-hour “participatory learning” counseling program, lowered the risk of herpes simplex virus type 2 (HSV-2) infection by 34.9 per 1000 people exposed in a community RCT of 70 E.Cape villages. Compared with a shorter program, Stepping Stones did not lower incidence of HIV-1 infection and had variable impacts on risk behavior in the young adults studied.

  - Men who completed the Stepping Stones program reported less intimate partner violence (IPV) over 2 years, less transactional sex over 12 months, and less problem drinking over 12 months.

  - But Stepping Stones women reported more transactional sex than women in the control program.

3.2.4. Concurrent Sexual Partnerships

- Taken together, the evidence that concurrency is driving the Africa AIDS epidemics is limited. There is as yet no conclusive evidence that concurrency:

  1. is associated with HIV prevalence;
  2. increases the size of an HIV epidemic;
  3. increases the speed of HIV transmission;
  4. increases the persistence of HIV in a population; or
  5. that this relationship has a large magnitude of effect.

- Current data on MCP comes from cross-sectional and ecological studies only; no RCTs or observational studies.

3.3. Structural HIV prevention interventions

IMAGE study on micro-finance

- Intervention with Microfinance for AIDS and Gender Equity (IMAGE) RCT in rural Limpopo assessed a structural intervention that combined a microfinance programme with a gender and HIV training curriculum. They study found that experience of intimate-partner violence (IPV) was reduced by 55%.

- The intervention did not affect the rate of unprotected sex with a non-spousal partner (aRR 1.02, 0.85–1.23), and there was no effect on the rate of unprotected sex at last occurrence with a non-spousal partner (0.89, 0.66–1.19) or HIV incidence (1.06, 0.66–1.69) in Cohort 3.

Summary: Behavioural and Structural HIV prevention interventions that work

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>Interventions</th>
<th>% Effectiveness or efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good evidence</td>
<td>HCT for PLWHA</td>
<td>68% reduction in high risk sexual behaviors [1 comm RCT]</td>
</tr>
<tr>
<td>Promising evidence</td>
<td>Stepping Stones</td>
<td>Lowered the risk of HSV-2 by 34.9 per 1000 people exposed; less IPV and less transactional sex [comm RCT]. IPV was reduced by 55% [comm RCT].</td>
</tr>
<tr>
<td>NO evidence</td>
<td>Abstinence-only interv’s, HCT on untested, Stepping Stones, IMAGE, Concurrency</td>
<td>7/13 reported sex [SR] no impact of C&amp;T on behavior of untested did not lower incidence of HIV-1 No effect on HIV incidence [comm RCT] No conclusive evidence</td>
</tr>
</tbody>
</table>
Highly Active (combination) HIV Prevention

Coates, Richter et al., 2008
The goal of social and behavioural interventions is to reduce the risk of HIV-related behaviours.

Specifically, interventions seek to:

- delay the onset of sexual intercourse,
- reduce the number of sexual partners a person has,
- reduce the incidence of unprotected sex by increasing condom use, or
- reduce or eliminate the incidence of substance (alcohol and drug) use
Levels of evidence and criteria for social and behavioural prevention interventions

• **Best-evidence HIV behavioural interventions** include interventions that have been *rigorously evaluated* and have shown significant effects in eliminating or reducing risk behaviours, reducing the rate of new HIV/STD infections, or increasing HIV-protective behaviours.

  *Criteria*: Prospective study design; at least a 3-month post-intervention follow-up assessment for *each* study arm; at least a 70% retention rate at a single follow-up assessment for *each* study arm.

• **Promising-evidence HIV behavioural interventions** include interventions that have been *sufficiently evaluated* and have shown significant effects in eliminating or reducing risk behaviours, reducing the rate of new HIV/STD infections, or increasing HIV-protective behaviours.

  *Criteria*: Prospective study design; at least a 1-month post-intervention follow-up assessment for *each* study arm; at least a 60% retention rate at a single follow-up for *each* study arm; positive and statistically significant \((p \leq .05)\) intervention effect for \(\geq 1\) relevant outcome measure; no evidence that any additional limitation was a fatal flaw.
Other examples of evidence-based social and behavioural prevention interventions from South Africa

- Apart from IMAGE and Stepping Stones, there are several other social and behavioural prevention interventions from South Africa and other resource-limited settings.

- One useful source is the Global Health Literature Digest produced on a biweekly basis by UCSF Global Health Sciences (GHS) on [http://hivinsite.ucsf.edu/InSite?page=jl-00-00 Part 1](http://hivinsite.ucsf.edu/InSite?page=jl-00-00 Part 1).

- These studies of behavioral, policy, and prevention interventions have one or more of the following aims:
  - to reduce sexual or drug-related risk behaviors,
  - to decrease primary or secondary transmission,
  - to improve health service delivery and quality of life,
  - and to improve HIV treatment and treatment adherence.
### Other examples of evidence-based social and behavioural prevention interventions from South Africa (contd)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Type &amp; Target group</th>
<th>Site(s)</th>
<th>Behaviour(s) targeted for change</th>
<th>Theory/Model</th>
<th>Evaluated?</th>
<th>Evidence?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phaphama STI</td>
<td>Clinic intervention</td>
<td>Spencer Road Clinic, CT</td>
<td><strong>↑</strong> Knowledge of HIV <strong>↑</strong> Motivation for safer sex</td>
<td>IMB</td>
<td>Yes in USA and SA</td>
<td>Large RCT in 3 PHC clinics</td>
</tr>
<tr>
<td></td>
<td>STI clinic attendees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Effectiveness in 13 clinics in Mpumalanga</td>
</tr>
<tr>
<td>Phaphama Alcohol</td>
<td>Community intervention</td>
<td>Delft, CT</td>
<td><strong>↓</strong> Alcohol as risk factor for HIV</td>
<td>IMB &amp; social networking</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patrons of shebeens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phaphama Men</td>
<td>Community Men</td>
<td>Gugulethu, CT</td>
<td>GBV HIV risk</td>
<td>Social constructionism &amp; &amp; social networking</td>
<td>Both interventions demonstrated positive effects on some of the outcomes</td>
<td></td>
</tr>
<tr>
<td>:</td>
<td>Nyanga, CT</td>
<td></td>
<td>Alcohol use HIV HIV risk</td>
<td></td>
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</tr>
</tbody>
</table>
### Other examples of evidence-based social and behavioural prevention interventions from South Africa (contd)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Type &amp; Target group</th>
<th>Site(s)</th>
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<th>Theory/Model</th>
<th>Evaluated?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phapama Community Alcohol</strong></td>
<td>Community intervention Patrons of shebeens</td>
<td>Gugulethu, Nyanga, Crossroads, Phillipi</td>
<td>↓ Alcohol as risk factor for HIV</td>
<td>IMB, Social cognitive &amp; social networking</td>
<td>Large efficacy RCT in 12 communities currently underway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No effectiveness</td>
</tr>
<tr>
<td><strong>Men as Partners</strong></td>
<td>Community (men &amp; women)</td>
<td>National</td>
<td>↓ gender-based violence, ↑ attitudes toward women, and ↓ HIV and STI risk</td>
<td>Social cognitive &amp; social networking</td>
<td>No effectiveness evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>?Evidence</td>
</tr>
</tbody>
</table>

No effectiveness evaluation?
### Other examples of social and behavioural prevention interventions from South Africa (contd)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Type &amp; Target group</th>
<th>Site(s)</th>
<th>Behaviour(s) targeted for change</th>
<th>Theory/Model</th>
<th>Evaluated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phaphama Male circumcision</td>
<td>Men undergoing medical or traditional male circumcision</td>
<td>Witbank, Mpumalanga</td>
<td>↓ HIV risk behaviour</td>
<td>IMB &amp; social networking</td>
<td>Feasible &amp; acceptable; Efficacy currently underway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No effectiveness evaluation</td>
</tr>
</tbody>
</table>
| Project Accept                        | Community RCT; Standard v.s Intervention community       | Sweetwaters KZN Mobile vans in rural community (Adults & young people) | ↑ HIV testing ↑ HIV disclosure & discussion ↓ Stigma & discrimination ↓ HIV risk behaviour | Diffusion of Innovations; Tipping point theory Social action theory | ↑ Diffusion of VCT  
                                  |                                                          |                              |                                                                                                   |                                  | ↑ Uptake of VCT by men, women, youth  
                                  |                                                          |                              |                                                                                                   |                                  | ↑ Mobilization of youth  
                                  |                                                          |                              |                                                                                                   |                                  | Combination prevention |
| NIDA Standard Intervention/ Woman-Focused Intervention | CSWs                                                      | Pretoria                      | ↑ condom use and ↓ alcohol and crack cocaine use ↓ GBV                                             |                                  | Efficacious                                    |

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**Notes:**
- Diffusion of VCT
- Uptake of VCT
- Mobilization of youth
- Combination prevention
- GBV (Gender-Based Violence)
- IMB & social networking
- Rural community (Adults & young people)
- Community RCT; Standard v.s Intervention community
- Mobile vans in rural community
- ↑ denotes an increase
- ↓ denotes a decrease
- ↑ HIV testing
- ↑ HIV disclosure & discussion
- ↓ Stigma & discrimination
- ↓ HIV risk behaviour
- ↑ condom use
- ↓ alcohol and crack cocaine use
- ↓ GBV
Other examples of evidence-based social and behavioural prevention interventions from South Africa (contd)

<table>
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<tr>
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<th>Evaluated? Evidence?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Prevention 1 - Healthy Relationships</td>
<td>Community intervention PLWHA in support groups</td>
<td>KSD district in EC</td>
<td>↑ Disclosure ↓ Primary HIV infection ↓ Secondary HIV infection</td>
<td>Social cognitive theory</td>
<td>Yes efficacy in USA; Feasibility and acceptability in pilot in Botswana and SA Currently being evaluated</td>
</tr>
<tr>
<td>Positive Prevention 2 - Options for Health</td>
<td>Individual PLWHA in clinical care</td>
<td>Durban Hospital PMB</td>
<td>↓ Primary HIV infection ↓ Secondary HIV infection</td>
<td>IMB</td>
<td>Yes efficacy in USA and also in a pilot study in Durban RCT in PMB currently underway; also effectiveness in Mpumalanga</td>
</tr>
</tbody>
</table>
### Other examples of evidence-based social and behavioural prevention interventions from South Africa (contd)

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<tr>
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<th>Theory/Model</th>
<th>Evaluated?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>19 AIDS communication programmes</strong> e.g., Soul City; Siyayingqoba Beat It, loveLife, TshaTsha, Takalani Sesame Street.</td>
<td>All age groups</td>
<td>National</td>
<td>↑Condom usage, ↑self efficacy in condom usage; ↑discussion of HIV testing and testing and knowledge of ARVs and ↑helping someone sick with AIDS</td>
<td>Multiple theories</td>
<td>No effectiveness evaluation</td>
</tr>
<tr>
<td>LoveLife</td>
<td>Communication campaign</td>
<td>760 sites. Media, Cellphones, Billboards,</td>
<td>↑Opportunities in life for youth ↑Communication among youth</td>
<td>“Eclectic model” 10 Commitments (ARRM)</td>
<td>No effectiveness evaluation</td>
</tr>
<tr>
<td>Scrutinize</td>
<td>Communication campaign</td>
<td>SABC TV audiences</td>
<td>↓MCP ↑Condom use ↓HIV risk ↓Transactional sex ↓Alcohol and sex</td>
<td>Social ecology model</td>
<td>No effectiveness evaluation</td>
</tr>
</tbody>
</table>

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Indirect evidence of impact on outcomes (based on modelling)
### Other examples of social and behavioural prevention interventions from South Africa (contd)

<table>
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<tr>
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<th>Theory/Model</th>
<th>Evaluated? Evidence?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soul City</td>
<td>Communication campaign</td>
<td>Multimedia</td>
<td>↓MCP, ↓GBV, ↓Alcohol</td>
<td>Social Ecology Model</td>
<td>No effectiveness evaluation yet.</td>
</tr>
<tr>
<td></td>
<td>Young people 15 – 26 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One Love</td>
<td>Communication campaign</td>
<td>SABC TV audiences LSM 1-10</td>
<td>↑MCP, ↑Talk, respect &amp; protect</td>
<td>Social Networking Theory</td>
<td>No effectiveness evaluation yet.</td>
</tr>
<tr>
<td></td>
<td>Young people and adults 8 -14 years; 16 - 45 years</td>
<td></td>
<td></td>
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</tbody>
</table>
Evidence-based HIV behavioural interventions in the US

- CDC’s AIDS Prevention Research Synthesis (PRS) project identified 18 best evidence, theory-based behavioural interventions demonstrating “best evidence” of efficacy for reducing HIV risk. They were targeted at heterosexual men and women, MSM, Youth, PLWHA and low income populations, etc.

“The…PRS efficacy review process has identified 49 evidence-based HIV behavioral interventions (as of November 2007).”

- The compendium of HIV prevention interventions… contains about 24 “other evidence-based interventions”, while “promising-evidence” HIV behavioural interventions are being evaluated.

Source: Lyles et al. (2007). Best-evidence interventions... AJPH, 97, (1): 133-43
Case study: How to diffuse effective behavioural interventions that work

- The Diffusion of Effective Behavioural Interventions (DEBI) project was designed to bring science-based, community, group, and individual-level HIV prevention interventions to community-based service providers and state and local health departments.

- The goal is to enhance the capacity to implement effective interventions at the state and local levels, to reduce the spread of HIV and STDs, and to promote healthy behaviors.
The Big Challenge NOW

Great HIV treatment success...
- 22 antiretroviral agents available
- More than 2 million people receiving ART

But 2.5 million new HIV infections/yr

HIV prevention lags behind and has not married treatment except for MTCT!!

HIV prevention MUST marry treatment NOW: With the community...a unified strategy
No “Magic Bullet” for HIV

“It is critical to note that there is no “magic bullet” for HIV prevention. None of the new prevention methods currently being tested is likely to be 100 percent effective, and all will need to be used in combination with existing prevention approaches if they are to reduce the global burden of HIV/AIDS.”

The AIDS epidemic has taught us to be innovative and to invent, test and implement new interventions.

We now have evidence of HIV prevention strategies that work!

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

THANK YOU