

# Social, Structural, and Environmental Factors in HIV Risk for Women

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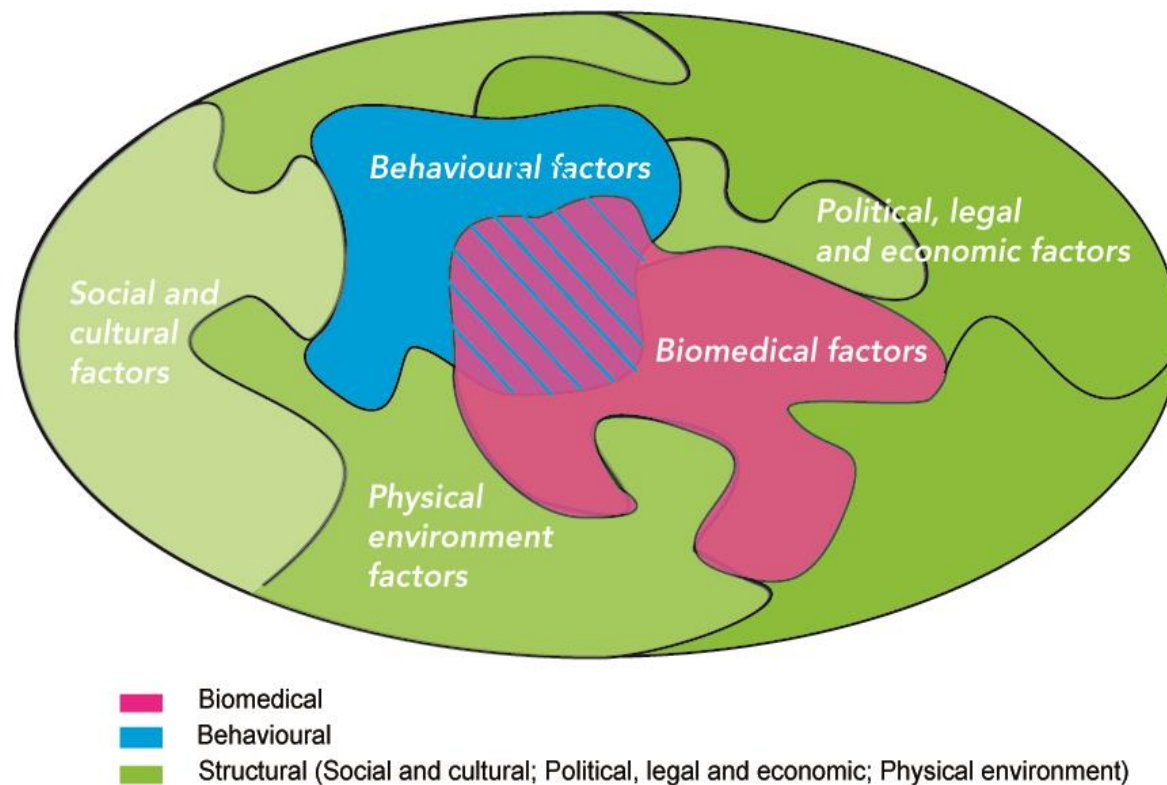
*Women's Research Initiative on HIV/AIDS (WRI)  
Santa Fe, New Mexico,  
March 23, 2012*

# Combination Prevention

## *UNAIDS Prevention Reference Group Definition*

“The strategic, simultaneous use of different classes of prevention activities (biomedical, behavioral, social/structural) that operate on multiple levels (individual, relationship, community, societal), to respond to the specific needs of particular audiences and modes of HIV transmission, and to make efficient use of resources through prioritizing, partnership and engagement of affected communities.”

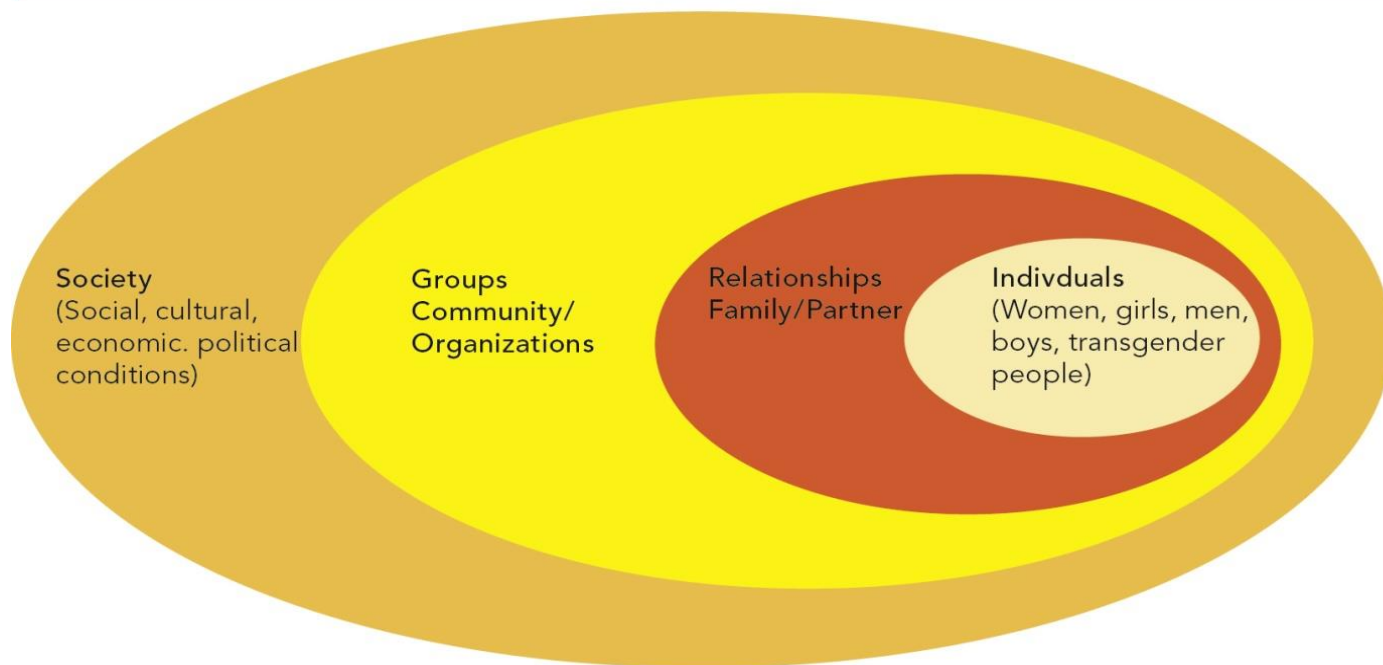
# Combination prevention - an analytic approach... (from de Zalduando)



that recognizes need to address structural factors in research and programme design

# Attention to risk and vulnerability builds on basic ecological model: “Levels” of interacting influences upon individual risk

Figure 5: A Social Ecological Framework - individual action is shaped by immediate life conditions, including relationships, community and occupational groups and organizations, and by broader societal factors



Source: UNAIDS (2010) Combination prevention...

# Recent Publications on Social/Structural Approaches & Interventions

PUBLIC HEALTH  
*Reports*

**Addressing social determinants of health in the prevention and control of HIV/AIDS, viral hepatitis, sexually transmitted infections, and tuberculosis.**

Dean HD, Fenton KA. *Public Health Reports* 2010 Jul-Aug; 125 Suppl 4:1-5.

THE LANCET

**Structural approaches to HIV prevention.**

Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. *Lancet* 2008; 372: 764-75

HealthAffairs

**Transforming social structures and environments to help in HIV prevention.**

Auerbach J. *Health Affairs* 2009 Nov-Dec;28(6):1655-65.

JAIDS  
JOURNAL OF ACQUIRED  
IMMUNE DEFICIENCY SYNDROMES

**Structural interventions for HIV prevention in the United States.**

Adimora AA, Auerbach JD. *JAIDS*. 2010 Dec 15;55 Suppl 2:S132-5.

Global  
Public Health  
An international journal for research,  
policy and practice

**Addressing social drivers of HIV/AIDS for the long-term response: Conceptual and methodological consideration**

Auerbach JD, Cáceres CF, and. Parkhurst JO , *Global Public Health* 20116(Sppl 3):S293-S309.

# Characterizing Social/Structural/Environmental Factors

# Social Drivers

**UNAIDS (2007) Definition:** “The social and structural factors, such as poverty, gender inequality, and human rights violations **that are not easily measured** that increase people’s vulnerability to HIV infection.” (emphasis added.)

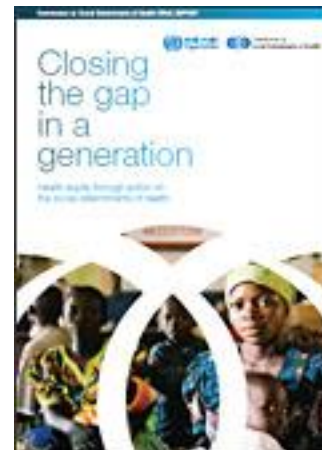
**AIDS 2031: Auerbach, et al. (2009, 2011) Definition:**  
*The core social process and arrangements—reflective of social and cultural norms, values, networks, structures and institutions—that operate around and in concert with individual behaviors and practices to influence HIV epidemics in particular settings.*



# Social Determinants of Health (WHO & Public Health Reports)

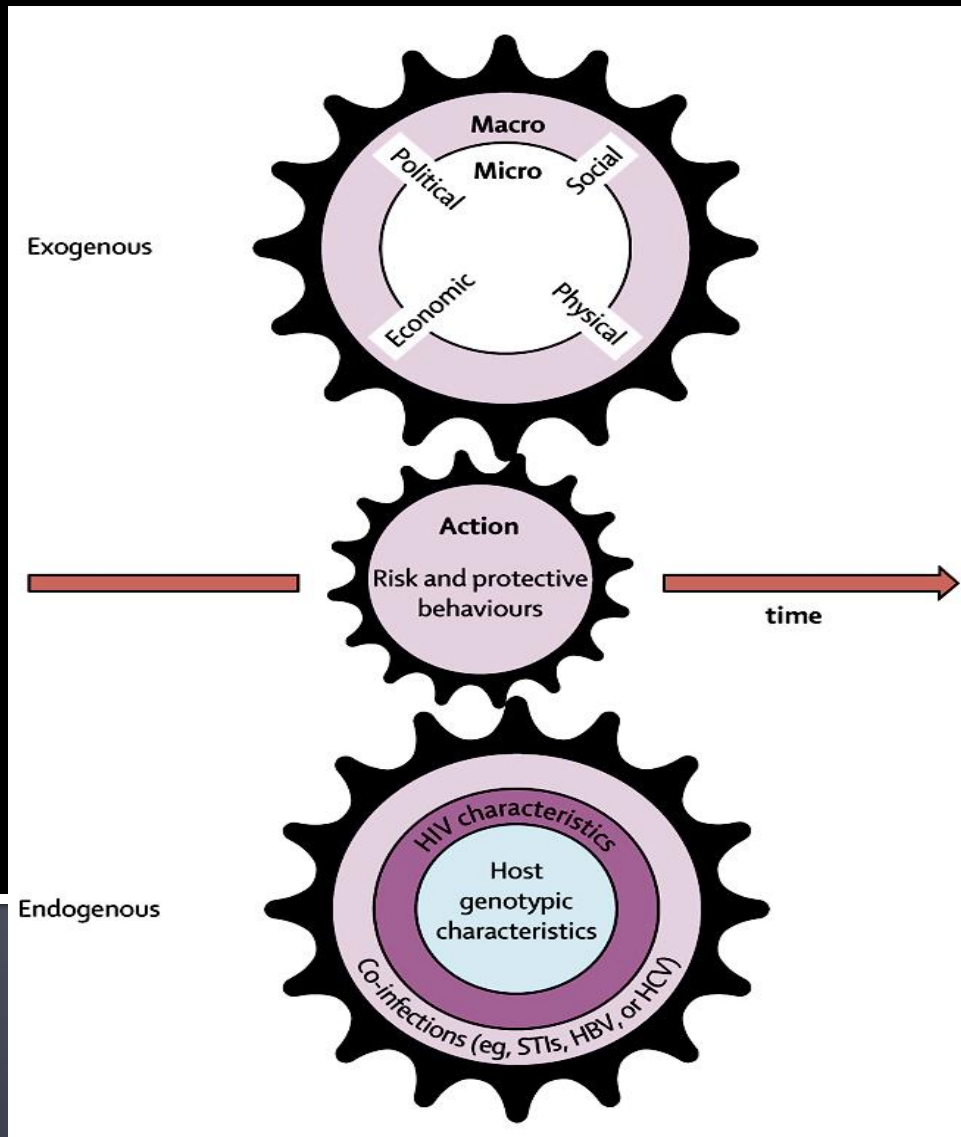


*"The social determinants of health are the **conditions** in which people are born, grow, live, work and age, including the health system. These circumstances are **shaped by the distribution of money, power and resources** at global, national and local levels, which are themselves **influenced by policy choices**. The social determinants of health are **mostly responsible for health inequities** - the unfair and avoidable differences in health status seen within and between countries" (emphasis added).*





# The HIV Risk Environment



- *Levels:*
  - Macro
  - Micro
- *Types:*
  - Physical
  - Social
  - Economic
  - Policy

Adapted by Strathdee et al., 2010, from Rhodes 1999 and Glass and McAttee 2006

# Social/Environmental Factors: IDU (

Adapted from Strathdee et al. 2010)

## ■ Macro

- Drug trafficking & distribution routes
- Deportation
- Police per capita
- Weak civil society
- Ethnic/racial inequalities
- Lack of health service revenue & spending
- Immigration policy & law
- Drug treatment policy & law

## ■ Micro

- Drug injection locations
- Homelessness
- Exposure to violence & trauma
- Local policing practices
- Sexuality & sexual orientation
- Education
- Cost of living & of health treatments
- Access to low-threshold and social housing

# How Do Social/Environmental Factors Operate?

- Not unilateral variables with causal, one-to-one linkages
- Interactive phenomena reflective of social processes
- Complex, fluid, non-linear, contextual
- Interact dynamically with biological, psychological, behavioral, and other social factors
- Must be characterized situationally and contextually

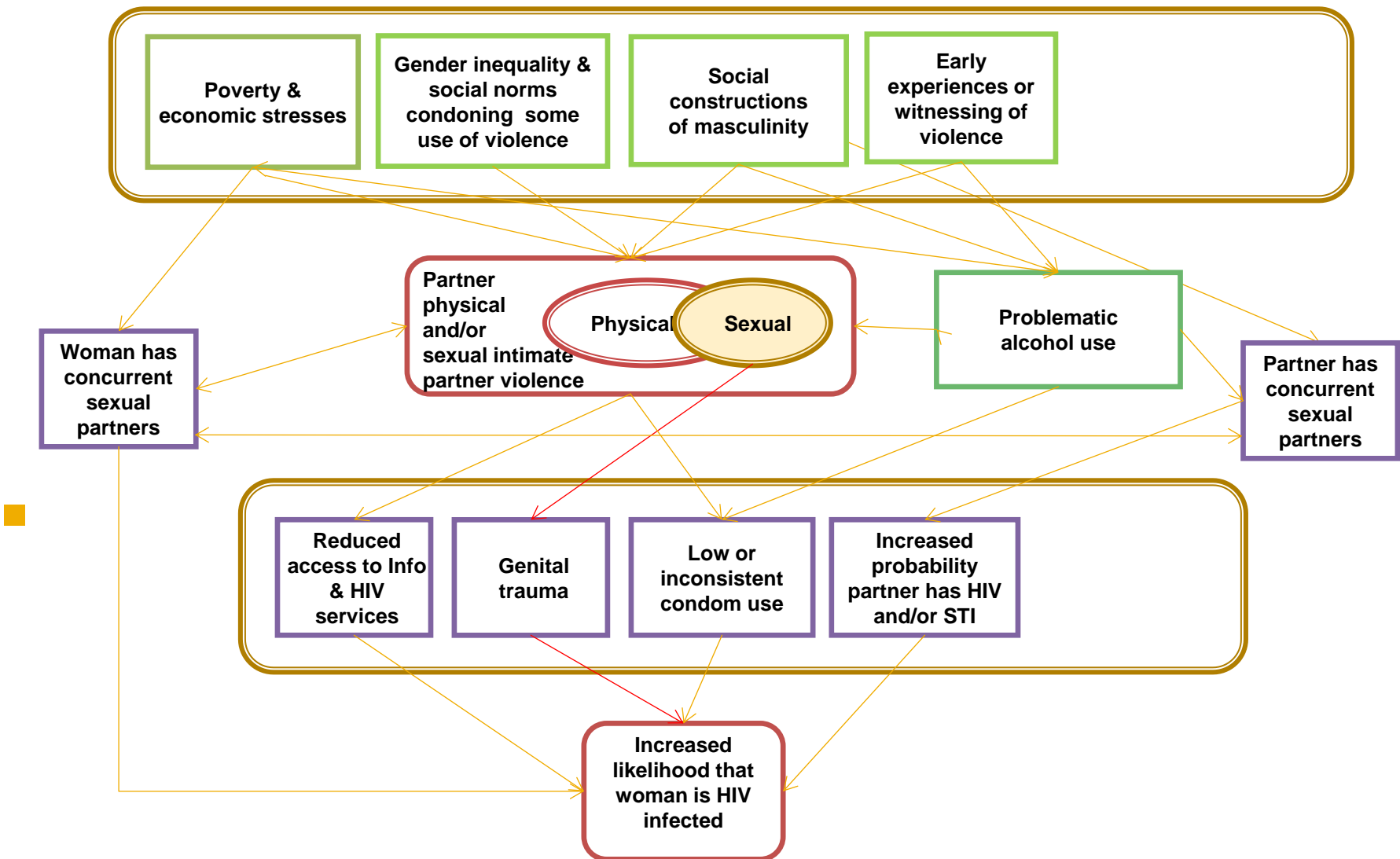
# **The Example of Violence Against Women (VAW) & HIV**

# Significance of Partner Violence Against Women in HIV Epidemics

- A WHO multi-country study found that between 15–71% of women reported experiencing physical and/or sexual violence by an intimate partner at some point in their lives.
- Women who have experienced partner violence more likely to be HIV infected than those who have not:
  - Women under 30 in Tanzania: 10 times more likely
  - Women in Rwanda: 89% more likely
  - Women ANC attendees in South Africa: 53% more likely
  - Married women in India: 3 times more likely

(See WHO 2010 for references)

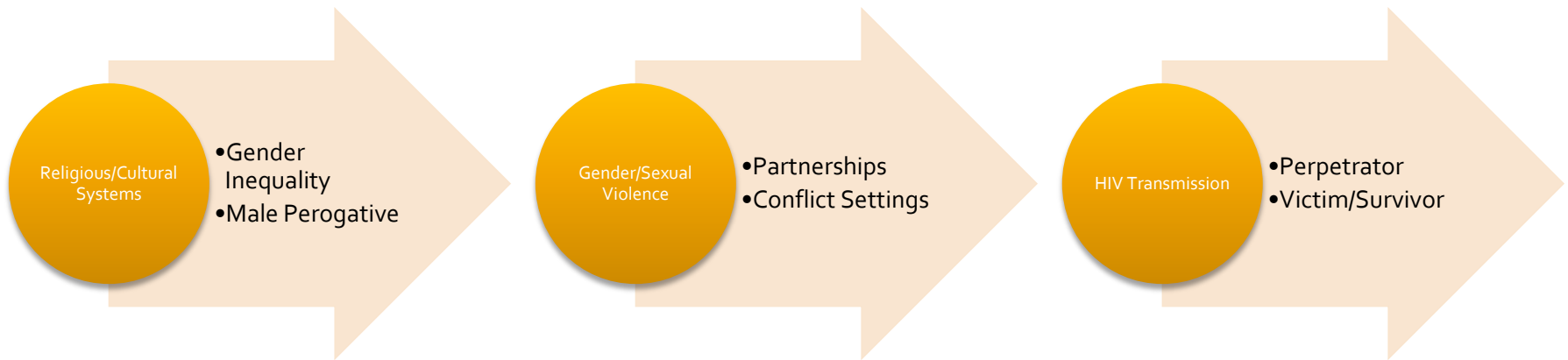
# Pathways of association between IPV and women's risk of HIV infection (from C. Watts, 2012)







# Where to Enter in the Causal Chain?



# **Social/Structural and Environmental Interventions**

# Aims of Social/Structural/Environmental Interventions

- Policy-Legal Changes
  - Criminalization of homosexuality
  - Criminalization of drug user/users
  - Marriage, property & inheritance rights
- Environmental Enablers
  - Access to and affordability of services
  - Educational & economic opportunities
- Shifting Harmful Social Norms
  - Gender/sexuality discrimination & violence
- Catalysis of Social & Political Change
  - Adopting human rights frame; building civil society capacity
- Empowerment of Communities
  - Advocacy among PLWHA
  - Community engagement in research

(Auerbach, 2009; Vincent, 2009)

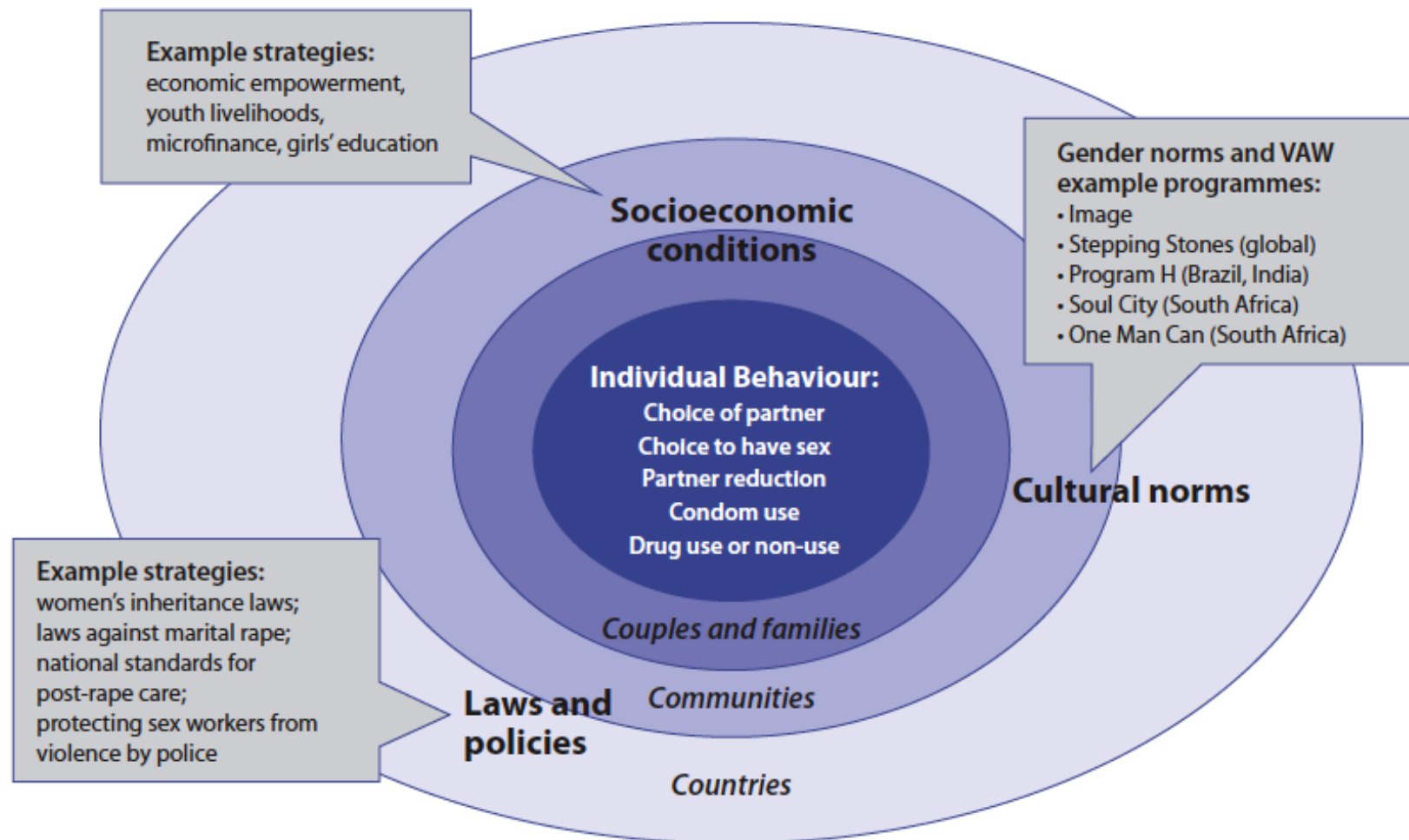
# Operationalization

- Structural approaches must begin with understanding of:
  - Level targeted—specific group of individuals or broader social, legal, economic environment.
  - Extent to which fundamental behavioral patterns are seen as fixed or changeable.
- Interventions may be “ameliorative” or “fundamental”, targeting proximal or distal risk factors, respectively

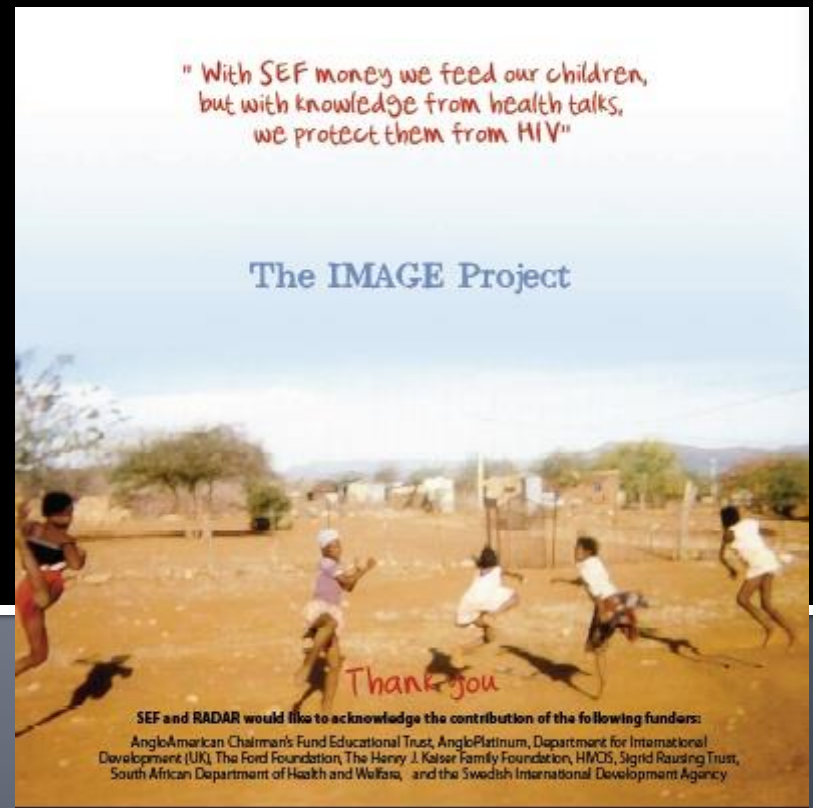
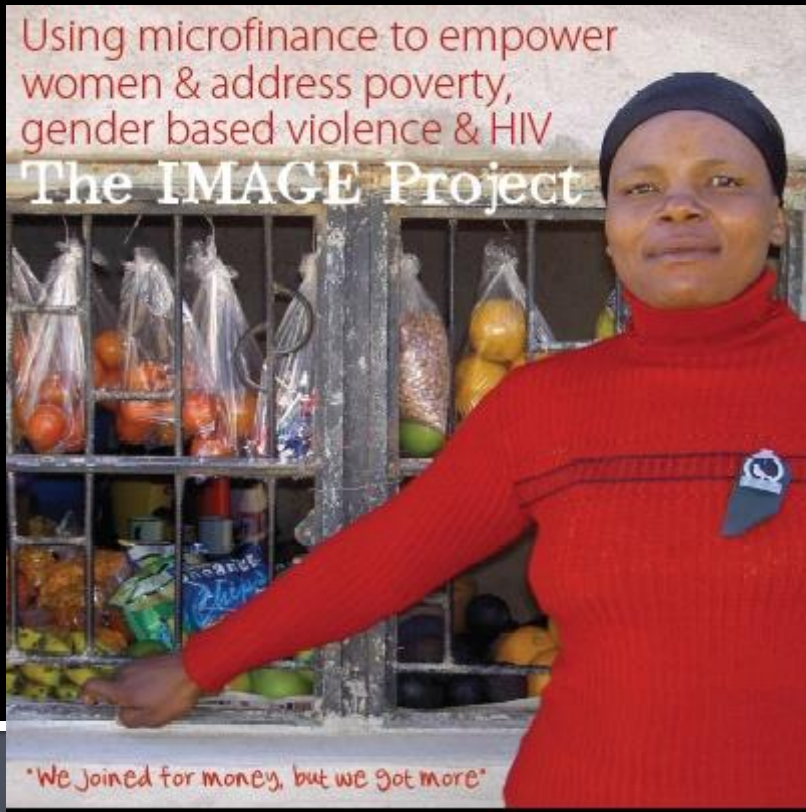
(See, e.g., Gupta et al. 2008; Blankenship et al. 2006; Cohen 2000; Coates et al. 2008)

# VAW & HIV Intervention Strategies

(from WHO 2010)



# Intervention for Microfinance and Gender Equity (IMAGE) (from Sherry Dworkin WRI 2010)



# IMAGE Design

- Aimed to reduce VAW and HIV by targeting poverty & economic & gender inequalities
- Community Randomized Controlled Trial (RCT)
- 8 rural communities, Lompopo, South Africa
- Offered microfinance loans to older women
- Paired loans with year-long participatory gender program
- Community mobilization, using village leaders focused on VAW and HIV
- Primary outcomes: IPV, unprotected sex, HIV incidence
- Secondary outcomes: social capital, gender equity, economic well-being, HIV awareness, sexual behavior



# IMAGE: Results (2005-2008) (from Sherry Dworkin, WRI 2010)

- Individual-level empowerment [loan recipients vs. controls,  $p < 0.05$ ]
  - Greater self-confidence
  - Disagreement with traditional gender roles
  - Greater household decision-making
- Improvements-Gender-based Violence [loan recipients vs. controls,  $p < 0.05$ ]
  - Significant reduction of IPV in the previous 12 months among the intervention arm relative to the control arm [55% reduction]
  - Significant change in attitudes towards IPV
- NO Impact on rate of unprotected sex at last intercourse with a non-spousal partner
- NO Impact on rate of unprotected sex with a non-spousal partner
- No Impact on HIV prevalence

# Stepping Stones (from WHO 2010)

- Cluster Randomized Controlled Trial (RCT)
- 70 Villages in Eastern Cape, South Africa
- Male and female (aged 15-26) peer groups
- Small group, participatory learning activities, based on adult education theory, Freirian models of critical reflection, use of theater and assertiveness training techniques.
- Aimed at improving sexual health through building more gender-equitable relationships (and modifying harmful gender norms).

# Stepping Stones: Outcomes (from WHO 2010)

- No statistical impact on HIV incidence.
- 33% reduction in new HSV-2 infections among all (male & female combined) intervention participants [RR 0.67; 95% CI 0.46-0.97].
- Reduced reported perpetration of IPV among men by 38% at 24 months (statistically significant).
- Reductions in male participant's engagement in transactional sex & problem drinking at 12 months.
- Only behavioral RCT intervention in Africa to demonstrate biological outcome.

# Types of Interventions & Programs

## Targeting VAW & HIV (from WHO 2010)

- Addressing gender equality, VAW, HIV through community engagement & women's empowerment (e.g., IMAGE, Stepping Stones)
- Service-based programs (e.g., South Africa HIV/AIDS Post-test Support Study)
- Addressing violence against key populations, e.g., sex workers and women who use drugs (e.g., Avahan)
- Mass media campaigns for health and social change, including addressing gender equality through working with men (e.g., Soul City, One Man Can)

# Other Interventions/Programs Addressing VAW & HIV (from WHO 2010)

## Intervention/Program

- SASA!, Uganda—Community RCT
- RHANI Wives, India—Cluster RCT
- Avahan—sex workers in Karnataka, India—structural intervention program
- Program H—young men in Brazil Replicated in Tanzania, Croatia, Viet Nam

## Outcomes

- Experience of IPV
- Marital communication, condom use & incident STI
- Decreased police violence, increased reporting of non-police violence
- Changes in interaction styles (less aggressive, more cooperative, increased HIV test-seeking, delayed initiation of sexual activity with current partner)

# **Methods & Measurement: The Evidence Wars**

**AKA: The Double Imperative of  
RCT and HIV Incidence**

# Methods & Measures: RCTs as the “Gold Standard”

## Strengths

- Establish efficacy—determines *IF* something works
- Have high internal validity

## Limitations

- Cannot determine *WHY* something works
- Low generalizability/external validity
- Rigid structure may hinder innovative research
- Limited applicability to more distal causes

(Mykhalovskiy & Weir 2004; Denzin 2009; Black 1996; Pawson & Tilley 1997; Victoria et al 2004)



# What Constitutes Evidence and Who Gets to Decide?: Competing Views 1

- “Randomized controlled trials (RCTs) are generally considered the gold standard to define the evidence base for HIV prevention programs and policies. However, only one in seven [*ed: now one in five*] RCTs of interventions to prevent sexual transmission of HIV has shown efficacy. In fact, **the overwhelming majority of completed RCTs are ‘flat’—unable to demonstrate either a positive or adverse effect . . .** Before abandoning randomization, it is important to consider the entire universe of RCTs . . . **RCTs will undoubtedly remain our gold standard in defining the evidence base for HIV prevention** programs and policies.” (Emphasis added.)

(Padian, et al. Weighing the gold in the gold standard: challenges in HIV prevention research. *AIDS* 2010)

# What Constitutes Evidence and Who Gets to Decide?: Competing Views 2

- “We argue that by limiting prevention program evaluation to experimental methods and HIV incidence as outcome, **the perfect becomes the enemy of the good**. The evidence base for ‘what works in prevention, where and for whom?’ will remain incomplete, sustaining confusion for program planners and contributing to the crisis of confidence in combination prevention, and subsequent inaction.”

(Laga, et al., Evaluating HIV prevention effectiveness: the perfect as the enemy of the good. *AIDS* 2012)

**Baird, et al., 2012. *Effect of a cash transfer programme for schooling on prevalence of HIV and herpes simplex type 2 in Malawi: a cluster randomised trial* (Lancet online Feb. 15)**

- The Zomba cash transfer program **reduced the prevalence of HIV and HSV-2 infection** at 18 month follow-up in school-age girls who were enrolled in school at baseline [1.2% (seven of 490 participants) in the combined intervention group versus 3.0% (17 of 799 participants) in the control group (adjusted odds ratio [OR] 0.36, 95% CI 0.14–0.91); weighted HSV-2 prevalence was 0.7% (five of 488 participants) versus 3.0% (27 of 796 participants; adjusted OR 0.24, 0.09–0.65)]. (Emphasis added.)
- “These effects are supported by changes in self-reported sexual behaviour. The findings suggest that financially empowering school-age girls and their families can have substantial effects on their sexual and reproductive health.”

## **Pettifor, et al. 2012. *Comment: Paying to prevent HIV infection in young women?* (Lancet Online Feb. 15)**

- “Although these findings are exciting, they are attenuated by the key weakness of this study: **the investigators did not measure HIV incidence, the gold standard in HIV prevention trials.** However, the balance of covariates between study groups at baseline and the consistency of effects across outcomes **suggest that the intervention was probably effective** in reducing HIV and HSV-2 infections.” (Emphasis added.)

# Different Methods for Different Goals

## *To Determine:*

*Effectiveness of intervention*

*Modeling*

*Mechanism of intervention*

*Reasons for differential impact in different populations*

*Longer Causal Chains depth*

*Role of Multiple Factors*

## *Common Methods:*

*Experimental/ Epi Methods  
Mathematical*

*Qualitative methods*

*Ethnography  
Participatory Methods  
Comparative Case Study  
Mathematical Modeling*

*Combination of Epi.,  
Behavioral & In-  
qualitative data*

*Multi-method studies*

# Efficacy and Effectiveness

- Efficacy: is the improvement in health outcome achieved in a research setting, in expert hands, under ideal circumstances: it measures the *individual-level* effect of an intervention
- Effectiveness: is the impact an intervention achieves in the real world, under resource constraints, in *entire populations*, and in specified *sub-groups of a population*

Aral & Peterman , *The Lancet*, 1998.

# Contingent Outcomes

(Susan Kippax, IAS Plenary, Rome July 2011)

Effectiveness is a contingent outcome of:

- the collective activity of a diverse range of actors both human and non-human, including the technologies themselves
- scientific practices and clinical services
- legal decisions and environments
- norms, values, and discourses that animate human behaviour/practice.

Race (2011); Haraway (2011); Michaels & Rosengarten (2010)



# Conclusion

- Efforts to combat HIV among women need to engage underlying social and environmental factors/determinants that contribute to vulnerability.
- Drawing causal linkages between social and environmental factors and HIV is complicated by:
  - Complex, nonlinear and interactive relationships between drivers/determinants and HIV
  - Importance of specific local contexts.
- Non-traditional methods/approaches required
  - Start from place of “sociological plausibility”
  - Draw from epidemiological as well as social science data.
  - Observational, modeling, triangulated methods tell stories of what worked and can work
- Changing risk environment may not show HIV outcome in short term. Does it count and should it be supported as HIV prevention?
- Social change is inherently political

# Acknowledgements

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