Health Behavior Change Interventions during Routine Outpatient Clinical Care in Uganda: HIV Counseling and Testing & Family Planning Interventions

Susan M. Kiene, Ph.D.
Departments of Medicine and Community Health
The Warren Alpert Medical School of Brown University
Rhode Island Hospital

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Uganda
Population Characteristics

- 31.4 million (~Canada)
  - Rural > 85%
  - Size: < Oregon
  - Population growth rate: 3.60 (4th)
  - Fertility rate: 6.7 (3rd)
  - Life expectancy 52.3 (198th)
  - Infant mortality 75/1000 births (35th)

Sources: 2007 DHS; CIA Factbook
Public Health Intervention Challenges in Uganda

- Basic childhood vaccine coverage < 80%
- Proportion of under-5 children and pregnant women sleeping under bednets 10%
- Contraceptive prevalence 24%
- Unmet need for family planning 41%
- HIV-prevalence 6.4%
- ARV coverage 39%

Source: 2006 Uganda DHS
Interventions in the Clinical Care Setting

• Individuals more likely to seek curative than preventative services
• Captive audience
• Potentially time and cost-effective in resource-limited settings
Gombe Hospital

- 100 bed district hospital providing free comprehensive medical care
- Serves population of 300,000
- Staff of 125
  - 5 doctors (3 full-time)
    - 1-2 on-duty each 24-hrs
- 3,500 admissions/year
- 12,000 routine HIV-tests/year
- HIV clinic 2,600 patients; 800 on ARVs
Overview

• Involving male partners in antenatal (ANC) services to increase family planning use and partner HIV-testing

• Provider-initiated routine HIV-testing during outpatient care

• Future directions
Rationale for Interventions during ANC

• 94% of pregnant women seek antenatal care (ANC)

**HIV-testing**
  – Nearly all receive HIV-testing but few partners attend or test

**Family Planning**
  – High unmet need for family planning

• Gender-dynamics suggest that couples-based approaches may be more effective (e.g., Allen et al., 1992; Bawah et al., 2002; Soliman, 1999)
Procedures

• Recruited from ANC between 6-8 month of pregnancy
• Interviewer-administered CAPI
  – Baseline
  – Approximately 10 weeks postpartum
• SoC Family Planning Education during ANC
• Invitation Cards for partner to attend ANC
Measures

• IMB factors regarding family planning
• Partner communication about family planning
• Seeking family planning services, couples counseling
• Prior and current use of family planning
• Future pregnancy intentions and fertility desires
• Partner HIV-testing
Participants

• 301 women attending ANC
  ▪ Age
    ▪ M = 25.7, SD=6.13, 18-44
  ▪ Marital Status
    ▪ All married and/or living with partner
    ▪ 25% in polygamous marriage
• Number of living children
  – M = 2.27, SD=2.26, 0-10
• 7.3% tested HIV-positive
Results

• 87% retention through follow-up
• 6% and 8% of women at baseline and follow-up respectively wanted to become pregnant within 2 years
• 37 (14.3%) partners attended ANC
Results

Discussed Family Planning with Partner

OR = 1.42, $X^2 = 4.12$, $p = 0.04$
Main effect of time: $\exp(B) = 6.52$, $X^2 = 49.74$, $p < 0.001$

Time x communication: NS
Main effect of time: \( \text{Exp}(B) = 1.15, \chi^2 = 2.90, p = 0.08 \)
Main effect of communication: \( \text{Exp}(B) = 1.45, \chi^2 = 24.5, p < 0.001 \)
Time \times\ communication: NS
Family Planning Behavioral Skills

Main effect of time: ns
Main effect of communication: \( \text{Exp}(B)= 1.39, \chi^2=10.59, p<0.001 \)
Time x communication: \( \text{Exp}(B)= 1.92, \chi^2=30.45, p<0.001 \)
Couples FP Counseling

Main effect of communication: $\text{Exp}(B) = 11.20$, $X^2 = 5.43$, $p = 0.02$

Main effect of partner ANC attendance: $\text{Exp}(B) = 3.23$, $X^2 = 5.44$, $p = 0.02$
Main effect of communication: $\exp(B) = 4.26$, $X^2 = 9.74$, $p = 0.002$
Main effect of partner ANC attendance: NS
Main effect of communication: $\text{Exp}(B) = 4.19, \chi^2 = 9.50, p = 0.002$

Main effect of partner ANC attendance: NS
Partner tested for HIV

Main effect of partner ANC attendance: Exp(\(B\)) = 10.52, \(X^2 = 25.61\), \(p < .001\)
Conclusions and Intervention Implications

- Importance of partner communication about family planning
- Efforts to promote partner attendance at ANC
Evaluating the effect of the standard-of-care provider-initiated HIV-testing program at changing sexual risk behavior in rural Uganda

Collaborators: Moses Bateganya & Rhoda Wanyenze, Makerere Univ. SPH; Haruna Lule, Gombe Hospital; Michael Stein & Ken Mayer, Brown; Jeff Fisher, UConn; Howard Tennen, UCHC

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Kiene et al., 2010, AIDS Patient Care and STDs, 24, 117-126.
HIV-testing taxonomy

- **Opt-in / client-initiated**
  - voluntary HIV-counseling and testing

- **Opt-out / provider-initiated**
  - Diagnostic screening
    - TB clinics
  - Routine
    - antenatal
    - emergency
    - inpatients
    - outpatients
    - prisons
  - **Door-to-door**

HIV-testing coverage
Uganda

- In rural areas:
  - Ever tested
    - Women: 21.6%
    - Men: 18.0%
  - Tested in last 12-months
    - Women: 10.8%
    - Men: 9.0%

Source: 2007 DHS
Increasing Access to HIV testing

- Newer HIV testing approaches have facilitated access to testing
  - Provider-initiated
  - Door-to-door
HIV Counseling and Testing

- Client-centered, collaborative between provider and patient

- Pre-test counseling
  - Information about the test, potential results, and follow-up services available
  - Risk assessment
  - Education about HIV transmission and prevention

- Testing

- Post-test counseling
  - Provide results
  - Risk reduction plan
  - Disclosure
  - Partner testing
Provider-Initiated HIV-testing policy in Uganda

MOH National Policy 2005

- Provider-Initiated HIV-testing
  - free, integrated into routine health care service delivery
- Objectives
  - Increase % of population aware of status
  - Transmission risk-reduction
  - Linkages to care and support
- Limited if any counseling
  - Effective at changing sexual risk behavior?
Implementation of Provider-Initiated HIV-testing in Uganda

- **2 referral hospitals**
  - inpatients, emergency, outpatient clinics, family members
- **8+ rural hospitals**
  - outpatients
- **Nationwide**
  - ANC

**Uptake 94-98%**

Wanyenze et al. (2008). *Bull World Health Organ*, 86, 302-309
Objectives

- Evaluate standard-of-care provider-initiated HIV-testing program to identify focus areas for future intervention
  - Partner testing
  - Risk-reduction
  - Linkage to care and support
Methods

- Recruited from OPD
  - eligibility
    - sexually active in prior 6mo
    - last HIV-test > 3-mo

- interviewer-administered CAPI
  - baseline
    - while waiting for results
  - 3-mo follow-up

- Qualitative elicitation research
  - Focus groups
  - Audio recording of counseling sessions
Measures

- uptake of partner testing (follow-up)
- sexual risk behavior and partner characteristics of 3 most recent partners in prior 3-months
Participants: Mpigi District, Uganda

- N = 245 (118 men, 127 women)
- Age
  - $M = 35.21, \text{ SD}=11.29, \text{ 18-76}$
- Marital status
  - 89.2% married or cohabitating
- Prior HIV-testing
  - 41.5% were first-time testers
HIV-testing results

- 32 of 245 tested positive (13.1%)
  - 11.1% women
  - 15.1% men
  - 65.6% of HIV-positive were first time testers
- 77 partners tested
  - 11 HIV-positive (14.3%)
Results

- Uptake of partner testing
- Sexual risk-reduction
  - Percent reporting risky sex
  - # of risky sex acts
    - Unprotected sex with partner of unknown or HIV+ status
    - If HIV+: unprotected sex with any partner
- Linkage to care
Knowledge of Partner’s Status

Percent knowing Partner's HIV-status

Baseline

HIV-negative 19%
HIV-positive 14%

3-mo FU

HIV-negative 34%
HIV-positive 36%

OR 5.13, CI (1.67–15.82)

Kiene et al., 2010, *AIDS Patient Care and STDs*, 24, 117-126.
Percentage reporting any risky sex

Risky sex: unprotected sex with a partner of unknown or serodiscordant HIV status
OR 0.15, CI (0.07–0.36)

Kiene et al., 2010, *AIDS Patient Care and STDs*, 24, 117-126.
Risk-reduction: Mean # of risky sex acts

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<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>3-mo FU</th>
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<tbody>
<tr>
<td>HIV-negative</td>
<td>18.13</td>
<td>19.83</td>
</tr>
<tr>
<td>HIV-positive</td>
<td>20.64</td>
<td>18.21</td>
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</table>

No significant change over time

Risky sex: unprotected sex with a partner of unknown or serodiscordant HIV status

Exp(B) 3.16, CI (0.65–15.42)

Kiene et al., 2010, *AIDS Patient Care and STDs*, 24, 117-126.
Linkage to care for HIV-pos

- **86% accessed care**
  - CD4$^+$ M=697.91 (SD 683.38, range 136-2,417, n=11)
  - 3 eligible and started on ARVs

- **Time to access care**
  - M=49.9 days, range 0-282

Kiene et al., 2010, *AIDS Patient Care and STDs*, 24, 117-126.
What about the content of the counseling?
Predictors of a decrease in risky sex acts

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<thead>
<tr>
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<th>Multivariate Adj</th>
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<tbody>
<tr>
<td>Discussed barriers to behavior change</td>
<td>$\text{Exp}(\beta) = .78$</td>
</tr>
<tr>
<td></td>
<td>($\text{CI} = .69-.89$)</td>
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<tr>
<td></td>
<td>$p &lt; .001$</td>
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<tr>
<td>Developed risk reduction plan</td>
<td>$\text{Exp}(\beta) = .93$</td>
</tr>
<tr>
<td></td>
<td>($\text{CI} = .87-.99$)</td>
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<td>$p = .04$</td>
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*Controlling for HIV-test results and partner testing

Kiene et al., 2010, *AIDS Patient Care and STDs*, 24, 117-126.
Discussion and Conclusion

Standard-of-care:
- not effective at reducing sexual risk behavior
- increased partner testing but…

Focus Areas for Intervention
- partner testing
- risk-reduction counseling
  - elicit client’s ideas
  - discuss barriers to change
  - collaboratively develop plan
Policy Implications

Outpatient Provider-Initiated testing

- Dec 2009 presented results to Uganda MOH
  - Revisions to national provider-initiated HIV-testing policy and guidelines
Current and Future Research

Current

- Develop client-centered counseling intervention for routine HIV-testing setting
  - Client-centered counseling (Motivational Interviewing)
  - study behavior change processes

Future

- Door-to-Door HIV testing / Family Planning Intervention
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Participants

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