Evaluating Conditional Cash Transfers to prevent HIV and other STIs in Tanzania

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Rewarding STI Prevention and Control in Tanzania (RESPECT Project)

Implementing institutions
Ifakara Health Institute
World Bank Development Economics Research Group
UC-Berkeley

Funding from the World Bank (Research Committee and Spanish Strategic Impact Evaluation Fund) and Hewlett Foundation/Population Research Bureau.
• Treatment: Important, but not the solution to slow the HIV/AIDS epidemic. Estimation that $1 in prevention averted $43 in treatment in Thailand (Over et al. 2007)

• Vaccine technology: Many years in future.

• Existing prevention efforts: Low effectiveness in most African settings.

• Novel approaches needed! Conditional cash transfers (CCT) have been promising in other domains ... could they be adapted to help slow the AIDS epidemic?
OVERVIEW

- **What**: “Proof of concept” evaluation of randomized CCT to incentivize reduction in risky sex.

- **Why**: Goal is to decrease HIV incidence, with potential subsequent long-run health and economic benefits.

- **How**: Condition cash incentives on periodic negative STI tests.

- **Where**: Ifakara Demographic Surveillance Site in rural Tanzania.
Mass information, education, and communication (IEC) campaigns: shown to have had relatively little impact on patterns of HIV transmission.

Research finds VCT, condom distribution, circumcision, can be cost-effective... but by themselves may not change trajectory of the epidemic.

In Tanzanian youth:
- Awareness of HIV prevention methods is high, but use of those methods is low.
- Condoms are cheap, but low use
- Recent VCT campaign had low take-up
• **Progresa/Oportunidades:**
  - Condition on education, health behaviors. Increased health visits, vaccinations, general health, height.

• **Contingency management:** Incentivize reductions in risky behaviors.
  - Substance abuse, e.g. cocaine, alcohol, tobacco
  - Weight loss
  - Seatbelt use

• **Several experiments in Malawi:** incentives for VCT, HIV incentive trials, regular CCT with monitoring of STI outcomes. (Thornton; Thornton and Kohler; Baird, McIntosh, Ozler)
CCTs to Reduce Risky Sexual Behavior?

- **Conditionality:** Increase “price” of risky sex, if positive STI test causes loss of CCT.

- **Time discounting:** Bring rewards of risk reduction closer to present, rather than just avoiding AIDS many years in future.

- **Income effects:** Direct impact on sexual behavior likely small, but can facilitate behavioral change, especially for women.
Because this is a novel approach, there are many unanswered questions on how an intervention using such an approach could be – or should be – designed.

- What is the appropriate target population? Set within residential communities or riskiest networks?
- What is the appropriate amount of cash to dispense?
- What interval of testing/payment is needed?
- For how long should the intervention run?
- How can women be assisted in bargaining ability?
- What are the risks?
The study will test the hypothesis that using cash as a primary incentive to reduce risky sexual behavior, coupled with counseling and life-skills training, will result in

- Enhanced economic well-being
- Improved sexual/reproductive health outcomes.
SPECIFIC OBJECTIVES

• Evaluate the impact of the combined CCT/counseling intervention during the intervention period (immediate and short-term effects) on STI incidence overall and by specific subgroups
• Evaluate the economic outcomes of the reward.
• Examine the long-term effects of the intervention – and its withdrawal – with final round of STI testing and surveying in the same population 12-months after the intervention has ended
• Compare the impact of the CCT intervention in the high-value cash transfer arm to that in the low-value cash transfer arm
The study is a Randomised control trial

Sample drawn from the DSS database

Participants 3000

Intervention group (Conditional cash) N=1,500

High-value N=750

Low-value N=750

Control group N= 1,500

Counseling and life-skills training
Conditionality: Treatment group

- Testing negative for a set of curable STIs (Chlamydia, gonorrhea, trichomonas, mycoplasma genitalium, syphilis)
- Although we are testing for them, we do not condition on HIV and HSV-2 because they are not curable.

Amount

- 20,000 TZ Shillings or ~ USD 20 every four months (high-value)
- 10,000 TZ Shillings or ~ USD 10 every four months (low-value)
Hypothetical rewards, how much would you change your sexual behavior if you were eligible for it?

How much would this eligibility for the reward motivate you to change your behavior?

- Very Much
- None
PSYCHO-SOCIAL COMPONENT (INTERVENTION 2)

- **Content**
  - The psycho-social component
    - Emphasizes gender-based counseling and “life-skills” training to increase basic financial literacy
    - Address gender/power inequities
    - Encourage deliberate decision-making in sexual and reproductive health (prevention of HIV, other STIs, and unintended pregnancy).

- **Frequency and type**
  - Once monthly, during the first year (2 hrs each session); Gender-specific groups
WHAT IS OFFERED TO THE PARTICIPANTS?

**Intervention group**
- Pre and post-counseling
- Group psycho-social counseling
- Life-skills training
- STI testing
- Inconvenience fee
- Treatment for STIs
- **Conditional cash**

**Control group**
- Pre and post-counseling
- Group psycho-social counseling
- Life-skills training
- STI testing
- Inconvenience fee
- Treatment for STIs
Chronology and study activities

* Pre and post-counseling

The post-intervention follow-up, 12-months later (month 24) will assess long-term biological impact.

Treatment, Psychosocial counseling and life-skill straining
EXPECTED OUTCOMES

- **Biological outcomes (proxies for risky sexual behavior)**
  - Total burden of infection
  - “interval-specific” incidence rates across arms
  - Impact of the treatment arm, e.g., on self-reported behaviors (e.g. condom use, number and concurrency of sexual partners, etc.).

- **Economic changes**

- **Gender-based Power relations**
Inclusion/Exclusion Criteria

- **Inclusion criteria** consist of sexually active males and females, **aged 18-30** (and spouses ages 16 or over) who reside in selected villages within the Kilombero/Ulanga district HDSS and who consent to participate in the study.

- **Exclusion criteria** includes:
  - **currently pregnant,**
  - intention to permanently migrate out of the DSS area within the next year, and
  - unwillingness to participate if assigned to the control arm.
Preliminary results from baseline survey (February – April 2009)

- We recruited 2419 individuals, 1198 males and 1221 females.
- Team A stayed for one week in each village to recruit, interview and collect specimens.
- Two weeks later, team B visits the village and delivers the results from the tests. 92.2% of the individual tested came back to receive their results. STI positive individuals received free treatment vouchers.
- Monthly counseling sessions started in the 10 villages
- First follow-up and second follow-up surveys completed and round 4 planned (February – April 2010)
Results from baseline survey
Marital status and sexual behavior

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>28.16%</td>
<td>13.91%</td>
</tr>
<tr>
<td>Married</td>
<td>57.34%</td>
<td>66.82%</td>
</tr>
<tr>
<td>Living in union</td>
<td>11.13%</td>
<td>12.07%</td>
</tr>
<tr>
<td>Divorced</td>
<td>3.37%</td>
<td>4.86%</td>
</tr>
<tr>
<td>Widowed</td>
<td>-</td>
<td>0.34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of partners in last 4 months</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>12.18%</td>
<td>10.44%</td>
</tr>
<tr>
<td>1</td>
<td>68.05%</td>
<td>86.16%</td>
</tr>
<tr>
<td>2</td>
<td>15.62%</td>
<td>2.72%</td>
</tr>
<tr>
<td>More than 2</td>
<td>4.15%</td>
<td>0.68%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condom use during last sexual intercourse</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>With spouse or union</td>
<td>15.06%</td>
<td>13.79%</td>
</tr>
<tr>
<td>With other partner</td>
<td>61.30%</td>
<td>49.51%</td>
</tr>
</tbody>
</table>
Baseline survey: Knowledge of HIV and prevention methods. High levels at baseline

<table>
<thead>
<tr>
<th>HIV</th>
<th>Males (N = 1175)</th>
<th>Females (N = 1191)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heard of AIDS or HIV?</td>
<td>99.83% (N = 1,177)</td>
<td>99.92% (N = 1,192)</td>
</tr>
<tr>
<td>Can die from AIDS</td>
<td>94.30%</td>
<td>92.53%</td>
</tr>
<tr>
<td>Knowledge of prevention methods (ABC): AIDS can be prevented by:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Just one partner</td>
<td>97.02%</td>
<td>97.40%</td>
</tr>
<tr>
<td>Regular condom use</td>
<td>85.62%</td>
<td>84.21%</td>
</tr>
<tr>
<td>Abstaining</td>
<td>91.32%</td>
<td>90.93%</td>
</tr>
<tr>
<td>Witchcraft</td>
<td>1.96%</td>
<td>4.11%</td>
</tr>
<tr>
<td>Other facts about HIV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy looking person can be HIV infected</td>
<td>97.19%</td>
<td>95.63%</td>
</tr>
<tr>
<td>Not being infected after having sex with HIV positive</td>
<td>50.21%</td>
<td>42.74%</td>
</tr>
<tr>
<td>Child can be infected during pregnancy</td>
<td>81.62%</td>
<td>88.92%</td>
</tr>
</tbody>
</table>
### Baseline survey: Perceptions about condoms and AIDS treatment

<table>
<thead>
<tr>
<th>How effective are condoms in reducing the chance of getting AIDS?</th>
<th>Males (N = 1175)</th>
<th>Females (N = 1191)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost never effective</td>
<td>13.45%</td>
<td>8.90%</td>
</tr>
<tr>
<td>Sometimes effective</td>
<td>15.32%</td>
<td>15.20%</td>
</tr>
<tr>
<td>Usually effective</td>
<td>19.06%</td>
<td>18.05%</td>
</tr>
<tr>
<td>Almost always effective</td>
<td>44.26%</td>
<td>42.91%</td>
</tr>
<tr>
<td>Don’t Know (DK)</td>
<td>7.91%</td>
<td>14.95%</td>
</tr>
</tbody>
</table>

### Facts and knowledge about AIDS treatment: AIDS treatment

<table>
<thead>
<tr>
<th>Facts and knowledge about AIDS treatment</th>
<th>Males (N = 1175)</th>
<th>Females (N = 1191)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is available in area</td>
<td>28.34%</td>
<td>38.37%</td>
</tr>
<tr>
<td>Causes person to live longer</td>
<td>86.13%</td>
<td>83.29%</td>
</tr>
<tr>
<td>Causes person to feel better</td>
<td>83.23%</td>
<td>79.51%</td>
</tr>
<tr>
<td>Eliminates the patient’s infectiousness</td>
<td>5.96%</td>
<td>5.25%</td>
</tr>
<tr>
<td>Cures the person</td>
<td>2.04%</td>
<td>2.77%</td>
</tr>
</tbody>
</table>
## Baseline survey: Testing for HIV before the study and perception of HIV and STI prevalence

<table>
<thead>
<tr>
<th></th>
<th>Males (N = 1175)</th>
<th>Females (N = 1191)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ever tested for HIV?</strong></td>
<td>34.81%</td>
<td>71.87%</td>
</tr>
<tr>
<td><strong>If yes, when last test?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 12 months ago</td>
<td>45.72%</td>
<td>44.98%</td>
</tr>
<tr>
<td>12-23 months ago</td>
<td>27.38%</td>
<td>28.62%</td>
</tr>
<tr>
<td>&gt;= 2 years ago</td>
<td>26.89%</td>
<td>26.40%</td>
</tr>
<tr>
<td><strong>Received the HIV test results?</strong></td>
<td>90.95%</td>
<td>92.29%</td>
</tr>
</tbody>
</table>

### Perceived HIV prevalence, HIV own’s risk and history of STIs.

| Perceived HIV prevalence for same age group in community | 16.01% (N = 1166) | 18.40% (N = 1175) |
| On scale 0-10 what is your risk of being HIV positive | 2.12 (N = 1175)   | 2.19 (N = 1191)   |
| Had sexual infection in last 12 months?                 | 3.48% (N = 1175)  | 2.27% (N = 1192)  |
Preliminary results from baseline survey

STI prevalence

- **Conditioned STIs:**
  - Chlamydia: Males: 1.69% - Females: 2.69%
  - Gonorrhea: Males: 0.42% - Females: 1.43%
  - Trichomonas: Males: 8.61% - Females: 16.40%
  - Mycoplasma genitalium: Males: 15.53% - Females: 22.05%
  - Syphilis: Males: 2.11% - Females: 1.26%

- **Not conditioned STIs:**
  - HIV: Males: 2.45% - Females: 4.63%
  - HSV-2: Males: 26.10% - Females: 43.31%
Some preliminary results beyond the baseline

- Since we are powered to detect changes after 12 months, the study team has decided not to release intermediary results by study arm from rounds 2 (June – August 2009) and 3 (October – December 2009).

- However, we present a few general evolutions on condom perception and decision about sexual activity and condom use among partners. Those are self-reported variables.
Is it embarrassing to buy condoms?

It is embarrassing to buy condoms

Round 1 Round 2 Round 3

Males
Females
Decision among partners about having sex

Both partners decide jointly about having having sex

- **Males**
- **Females**

Round 1 | Round 2 | Round 3
---|---|---

Decision among partners about using a condom

Both partners decide jointly about using a condom

- Males
- Females

<table>
<thead>
<tr>
<th>Round</th>
<th>Males</th>
<th>Females</th>
</tr>
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<tbody>
<tr>
<td>Round 1</td>
<td></td>
<td></td>
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<tr>
<td>Round 2</td>
<td></td>
<td></td>
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<tr>
<td>Round 3</td>
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</tbody>
</table>
• Ethical clearance by
  o Ifakara Health Institute (IHI) Institutional Review Board
  o National Institute of Medical Research (NIMR)—Ministry of Health and Social Welfare, Tanzania
  o The University of California, Berkeley
Community Sensitization to enhance transparency

- In each study village, study staff worked with village leaders to build understanding of and support for the study within the villages.
- Study staff gave presentations at community meetings to explain the study and encouraged questions from all concerned community members.
- Study staff also worked together with the community performing groups to provide education on the importance of STI prevention.
ETHICAL CONSIDERATIONS-INDIVIDUAL LEVEL

- Minors are excluded – minimum age is 18 years
- Comprehensive informed consent
- Free treatment is offered to those who test positive and given another chance to participate
- Partner treatment encouraged via extra vouchers
- HIV/AIDS positive participants will not be excluded nor dropped out of the study.
- We only condition the CCT on curable STIs
ETHICAL CONSIDERATIONS - INDIVIDUAL LEVEL (2)

- Counseling and life-skills training is offered to all.
- Inconvenience fee to all participants (USD 2 per visit).
- The proposed set of STI tests to be performed have been selected to ensure that only minimally invasive procedures are needed for specimen.
- Barcodes are used to protect the confidentiality of study participants.
Future Possibilities?

- CCT is still rare in Africa, but proof of concept can be powerful, if successful.
- Many challenges to scaling up this design. Expensive, logistically difficult, and requires high prevalence setting. May be most promising in specific populations:
  - High risk groups, e.g. MSM, sex-workers.
  - Employer-based health programs.
- Scale-up could be easier if use random testing with large lottery-type payoffs.
Thank you