Implementation Science @ RHSP: The mLAKE Health Scouts Trial

The Hard-To-Reach Study

Larry William Chang, MD, MPH
Associate Professor of Medicine, International Health, & Epidemiology
Johns Hopkins School of Medicine & Bloomberg School of Public Health
The mLAKE Health Scouts Trial

mHealth Lakefolk Actively Keeping Engaged
The mLAKE HealthScouts Trial: Overview

• **Timeframe:** 2015-2019

• **What?** A trial on the impact of CHWs promoting HIV services using a motivational interviewing approach, supported by a smartphone application.

• **How?** Cluster-level, randomized trial in a fishing community on Lake Victoria.

• **Primary Outcomes:**
  - ART and Male Circumcision Coverage
  - HIV Viral Suppression

• **Implementation Science Outcomes:**
  - RE-AIM Framework
The mLAKE Health Scouts Trial: Cluster Design

- Pragmatic Trial
- Parallel, Cluster-randomized, Controlled Trial
- Allocation Ratio 1:1
- 1 Cluster has ~65 households or 107 “clients”
Health Scouts Intervention: Core Components

- CHW-based delivery at the Household
  - CHWs visit every household in intervention clusters q3 months.
- Motivational Interviewing-based counseling strategies
  - situated Information, Motivation, and Behavioral Skills Model (sIMB)
- mHealth (mobile phone)-supported

**Example Module (1 of 9): HIV+, Not in Care**

**Motivational Interviewing Framework**

- **Information**
  - Can you tell me what you know about HIV care?
  - What concerns do you have about the costs of HIV care?

- **Motivation**
  - What would be some benefits to getting into HIV care?
  - What are your concerns about it?
  - What have been the not so good things that have happened or may happen by not getting into care?

- **Behavioral Skills**
  - How confident are you that you could get HIV care if you wanted to?
  - What are things that would make it difficult to get HIV care even if you wanted to?

- **Intentions**
  - Given how you feel right now, would you want to get HIV care?

- **Targets**
  - What would need to change for you to want to get HIV care?

- **Key Messages**
  - HIV care is free at the RHSP clinic.

**Individualized Screening:**

- **Individual Screening**
  - Have you ever participated in this counseling service before?
  - Age, Gender, Marital Status, Occupation, Circumcision Status, Pregnancy, Children?
  - Have you ever been tested for HIV?
  - Have you ever tested positive for HIV?
  - Are you taking Septim? ARVs?
  - When did you last go to a clinic or hospital for HIV care?
  - Have you had sex without a condom in the past 12 months?

**Modules**

- A: HIV unknown/No recent test
- B: Male, HIV+, MMC-
- C: HIV+, Not in care
- D: HIV+, In care, Not on ART
- E: HIV+, On ART
- F: Male, Risky Sex+
- G: Female, Risky Sex+
- H: Mobility+
- I: Pregnant+
- J: HIV+, Children+
- K: No Risk Behaviors

---

The mLAKE HealthScouts Trial
The mLAKE HealthScouts Trial

Design and Implementation of a Community Health Worker HIV Treatment and Prevention Intervention in an HIV Hot Spot Fishing Community in Rakai, Uganda

Amanda Long, MSPH, Ismail Mbabli, MBChB, MPH, Heidi E. Hutton, PhD, Alvin G. Thomas, MSPH, Eva Bugos, MSPH, Jeremiah Mulumba, DMHIN, Kathy Rivet Amico, PhD, Fred Naluuga, PhD, Ronald H. Gray, MBBS, MSc, Maria J. Wawer, MD, Gertrude Nakigozi, MBChB, PhD, and Larry W. Chang, MD, MPH.
The Hard-to-Reach Study: Hard-to-Reach Populations Implications for Ending the AIDS Epidemic
The Hard-to-Reach Study

• **Timeframe:** 2019-2023

• **What?** An observational, network, and modeling study of hard-to-reach populations.

• **Aim 1:** Determine HIV service coverage and incidence among hard-to-reach persons using enhanced observational surveillance techniques→Tracking.
The Hard-to-Reach Study

- **Aim 2**: Characterize ongoing sources of incident HIV infection through partner tracing, viral phylogenetics, and sexual network analyses.
The Hard-to-Reach Study

• **Aim 3** - Determine if state-of-the-art HIV interventions can engage hard-to-reach populations and eliminate HIV by 2030.
Thank You!
Implementation Science @ RHSP:

Cluster Randomized Trial of Voluntary Medical Male Circumcision (VMMC) to Increase Uptake in Men Aged 19+. “Stylish Man”

Stylish Man Event and Mobile Van
Stylish Man

Rationale
• Older men ≥ 19 are under-represented in VMMC programs

Design
• Non-medicalized intervention (“Stylish Man Program”) to increase uptake of VMMC in men aged ≥ 19
  • 34 communities were assigned to 10 clusters
    • 5 pairs with comparable geographic locations and randomized to intervention and control arms.

• Endpoints
  • Number of circumcisions
  • Circumcision prevalence in men ≥ 19

Acceptance was higher in adolescents & lower risk men
Stylish Man Program

Goals:
2. Involve whole community (including women) in MC conversation (“buzz”)
3. Improve access to VMMC services

Intervention Components:
1. Mass media (radio, posters)
2. Stylish Man Event, 3-4 days/community (Village Organizing Committees, multimedia, Stylish Van (i.e., pro-VMMC) music, games, raffles, testimonials, “informative fun”).
3. Simultaneous access to VMMC via mobile camp.
4. Control clusters received VMMC via routine mobile circumcision camps.
### Results

#### Stylish Man VMMC

<table>
<thead>
<tr>
<th></th>
<th>Intervention Arm</th>
<th>Control Arm</th>
<th>Rate Ratio (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Circumcisions</strong></td>
<td>5992</td>
<td>4395</td>
<td></td>
</tr>
<tr>
<td><strong>Men Aged ≥19 years</strong></td>
<td>1871 (31.2%)</td>
<td>548 (12.5%)</td>
<td>2.5 (2.30-2.81)</td>
</tr>
</tbody>
</table>

VMMC Camp with Stylish man

Men circumcised in stylish man camp
Conclusions

The Stylish Intervention:

• Increased the number of men circumcised in the programs
Implementation Science @ RHSP:

Community Randomized Trial of Outreach to New In-Migrants:

“Welcome In-coming Neighbour (WIN)”
“Welcome In-coming Neighbour (WIN)”

• **Rationale:**
  • In the first 2 years after migration, HIV incidence among in-migrants is double that of residents.
  • Use of combined HIV interventions (CHI) is low.

• **Design:**
  • 40 communities randomized to the WIN intervention or control
  • WIN Intervention: WIN Scouts identify and visit all new in-migrants, conduct up to 3 home visits
  • Use motivational interviewing (non-coercive, non-judgmental, probe for in-migrant’s own goals and concerns to develop a plan of action)
  • Evaluation through the RCCS (use of CHI by in-migrants and HIV incidence both arms)
“Welcome In-coming Neighbour (WIN)”

• Launched in March, 2019

• 35 WINs successfully trained in motivational interviewing

• In-migrant enrollment by Sept 2019:
  • Target: ~1,000
  • Actual: ~2,600
    • (Yeah, WINs team!)
Thank You!
Rakai Health Sciences Program

Non-Communicable Diseases (NCD) & HIV-Associated Co-Morbidities
NCDs in Rakai, e.g. HTN

- Hypertension and CVD risk factors among HIV-infected individuals
- 426 HIV+ enrolled (median Age=40)

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;50 yrs</td>
<td>≥50 yrs</td>
<td>&lt;50 yrs</td>
<td>≥50 yrs</td>
</tr>
<tr>
<td>Hypertension</td>
<td>5.2%</td>
<td>28.1%</td>
<td>7.1%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Any Elevated BP</td>
<td>23.0%</td>
<td>43.8%</td>
<td>27.6%</td>
<td>34.6%</td>
</tr>
</tbody>
</table>

Sander L et al. Trop Med Int Health 2015
Smoking in Rakai

- RCCS Round 18 (2017-2018), By Gender and Age Groups
- *Do you smoke cigarettes, tobacco, or pipe? Yes or No*

<table>
<thead>
<tr>
<th></th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30+</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong>&lt;br&gt;(n=10153)</td>
<td>0.2%</td>
<td>1.3%</td>
<td>3.1%</td>
<td>4.9%</td>
<td>3.1%</td>
</tr>
<tr>
<td><strong>Men</strong>&lt;br&gt;(n=8972)</td>
<td>0.5%</td>
<td>4.2%</td>
<td>10.4%</td>
<td>23.1%</td>
<td>13.8%</td>
</tr>
</tbody>
</table>
### Obesity in Rakai

- RCCS Round 18 (2017-2018) BMI, By Gender and Age Groups

#### Females

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>BMI 15-19</th>
<th>20-29</th>
<th>30-39</th>
<th>&gt;40</th>
<th>Total % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18.5</td>
<td>10%</td>
<td>4%</td>
<td>4%</td>
<td>5%</td>
<td>6% (507)</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>76%</td>
<td>64%</td>
<td>53%</td>
<td>54%</td>
<td>61% (5644)</td>
</tr>
<tr>
<td>25.0-29.0</td>
<td>13%</td>
<td>24%</td>
<td>28%</td>
<td>26%</td>
<td>24% (2198)</td>
</tr>
<tr>
<td>≥30 (Obese)</td>
<td>1%</td>
<td>8%</td>
<td>15%</td>
<td>15%</td>
<td>10% (946)</td>
</tr>
</tbody>
</table>

#### Males

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>15-19</th>
<th>20-29</th>
<th>30-39</th>
<th>&gt;40</th>
<th>Total % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18.5</td>
<td>21%</td>
<td>5%</td>
<td>7%</td>
<td>10%</td>
<td>9% (864)</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>77%</td>
<td>87%</td>
<td>80%</td>
<td>75%</td>
<td>81% (7345)</td>
</tr>
<tr>
<td>25.0-29.0</td>
<td>2%</td>
<td>8%</td>
<td>12%</td>
<td>14%</td>
<td>9% (816)</td>
</tr>
<tr>
<td>≥30 (Obese)</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
<td>1% (79)</td>
</tr>
</tbody>
</table>