

Feasibility and Acceptability of Health Communication Interventions Within a Combination Intervention Strategy for Improving Linkage and Retention in HIV Care in Mozambique

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Outline

- Effectiveness Study and Combination Intervention Strategy
- Process Evaluation
- Results
 - Dose Delivered
 - Dose Received
- Discussion and Conclusions

Engage4Health Effectiveness Study

- Evaluate effectiveness of combination intervention strategy compared to standard of care in improving linkage to and retention in care among adults following HIV diagnosis
- Cluster-randomized implementation science study at 10 primary health clinics in Mozambique
 - Urban and rural sites
 - 2,004 adults ≥ 18 years of age enrolled in VCT clinic



Interventions

Structural

- **Point of care CD4 testing:** PIMA CD4 count in VCT clinic, same day return of results
- **Accelerated ART initiation:** Initiation within 1 week
- **Non-cash financial incentives:** Airtime vouchers for linkage in 1 month and retention at 6 & 12 months

Health Communication

- **Modified pre-ART counseling:** One ART preparatory counseling session in VCT clinic for ART-eligible clients
- **SMS reminders:** Routine SMS health messages and appointment reminders

Process Evaluation

- Unique opportunity to:
 - Compare feasibility and acceptability of **health communication** versus **structural** interventions within a combination intervention strategy
 - Document and assess “real-world” implementation successes and challenges of different interventions types

Process Evaluation Design

- Summative process evaluation
 - Dose delivered (feasibility)
 - Dose received (acceptability)
- Used Steckler & Linnan framework and Saunders, Evans & Joshi guide

1. Steckler A, Linnan L. *Process Evaluations for Public Health Intervention and Research*, San Francisco, CA: Jossey-Bass; 2002.

2. Saunders R, Evans MH, Joshi P. Developing a Process-Evaluation Plan for Assessing Health Promotion Program Implementation: A How-To Guide. *Health Promot Pract.* 2005;6(2):134-147

Data Sources

- Data abstracted from pre-existing sources
- **Facility-level:** CD4 testing and pre-ART counseling
 - 5,934 adult clients testing HIV-positive at intervention sites
- **Participant-level:** All five interventions
 - 1,237 study participants enrolled at intervention sites

	Electronic Patient Medical Records	Study Records and Reports	Frontline SMS Database	Participant Interviews 1 and 12 Months After Diagnosis
Dose Delivered	X	X	X	
Dose Received				X

Dose Delivered: Structural Interventions

Point-of-Care CD4 in VCT Clinic

	N (%)	Range across facilities (%)
Facility-level: Clinic patients with CD4 test and results available and provided to the patient in VCT clinic immediately following HIV diagnosis	4382 (74%)	143-1400 (67%-79%)
Participant-level: Study participants for whom the POC CD4 test results were used to determine ART eligibility for ART initiation	454 (83%)	1-75 (40%-100%)

- No meaningful improvement in CD4 testing over time
- Implementation challenges
 - Machine malfunctions
 - Facility power outages
 - Staff shortages, absenteeism and turnover
 - Provider mistrust of POC CD4 results

Accelerated ART Initiation

	N (%)	Range across facilities (%)
Participant-level: Study participants with follow-up appointment scheduled within 1 week of HIV test	1134 (92%)	33-296 (83%-100%)
Participant-level: Study participants who initiated ART within 1 month of HIV test among those eligible	366/683 (53%)	10-131 (43%-60%)

- Implementation challenges
 - Receptionist resistance to opening patient file
 - High patient volume; appointment backlog
 - Clinicians wanted lab results or additional pre-ART counseling prior to ART initiation

Financial Incentives

		N (%)	Range across facilities (%)
Participant-level: Eligible study participants who attended appointment for HIV care and treatment during the appropriate follow-up periods -- 30 days, 6 months, 12 months -- and received financial incentive	30 days	401/493(90%)	18-104 (75%-100%)
	6 months	214/240 (90%)	8-60 (78%-100%)
	12 months	N/A	N/A

- 90% of participants received 1st incentive; 43% received 2nd incentive
- Implementation challenges
 - Participants ineligible
 - Participant confusion/lack of time to collect incentive
 - Study staff errors in determining eligibility

Dose Delivered: Health Communication Interventions

Modified Pre-ART Counseling

	N (%)	Range across facilities (%)
Facility-level: Individuals with first pre-ART counseling session provided at VCT clinic immediately following POC CD4 count among those with CD4 <350 and eligible to initiate ART	2481 (98%)	112-770 (95%-100%)
Participant-level: Average of two or fewer pre-ART counseling sessions prior to ART initiation	1.6 sessions	1 -2.3 sessions

- Implementation challenges
 - Limited availability of counselors in VCT clinic
 - Clinicians requested additional pre-ART counseling despite modified delivery
- Clinician acceptance increased over time

SMS Health Messages & Appointment Reminders

		N (%)	Range per participant (mean)
<i>Participant-level: Weekly, monthly, and pre-appointment reminders sent at appropriate frequency by study staff</i>	Weekly	1028 (83%)	1-8 (mean: 3.75)
	Monthly	1105 (89%)	1-15 (mean:10.73)
	Pre-Appointment	679/1,181 (57%)	1-10 (mean: 2.6)

- Implementation challenges
 - Delayed data entry of appointment dates
 - Challenges programming SMS platform for automatic message delivery
 - Message delivery data lost during platform upgrade

Dose Received

	Most useful for linkage 1 month after diagnosis	
	Intervention (N=591)	Intervention + Financial Incentive (N=418)
	N (%)	N (%)
Structural		
POC CD4 count	258 (43%)	174 (41%)
Financial incentive	N/A	12 (3%)
Health Communication		
Pre-ART counseling	188 (32%)	165 (39%)
SMS messages/reminders	131 (22%)	53 (13%)
Other Responses		
None	4 (1%)	0 (0%)
Do not know/Refused	10 (2%)	14 (4%)



Discussion

- Unique barriers for each intervention type
- High feasibility of health communication interventions
 - Higher dose delivered than structural interventions
 - Fewer documented barriers to delivery
 - Improved dose delivered over time
- Dose Received
 - Acceptability of both intervention types for linkage
 - Higher acceptability of health communication (SMS reminders) than structural intervention (financial incentives) for retention

Dose Delivered: Facility Implementation

Point of care CD4 testing & accelerated ART initiation

- New equipment + additional training
- Modified patient flow
 - Task-shifting of CD4 testing to VCT staff
 - Coordination between HCW to implement interventions
- Difficulty absorbing increase in eligible ART patients

Modified pre-ART counseling

- Only modified location and timing of service delivery
- Counselors already trained and providing pre-ART counseling
- Initial HCW resistance improved over time

Dose Delivered & Dose Received

SMS reminders and financial incentives both delivered to participants over time, but differences in implementation and acceptability

SMS reminders

- Dose delivered and dose received improved over time
 - Challenges with SMS platform addressed
 - More positive perceptions for retention than linkage
- Highlights importance of user-friendly platform and timing of delivery

Financial incentives

- Dose delivered decreased over time
- Perceived as least useful intervention for linkage and retention
- Highlights challenges in determining appropriate incentive type and delivery method

Strengths and Limitations

- Strengths
 - Compared two intervention types, each with several individual interventions
 - Use of multiple, complementary data sources
 - Real-world setting
- Limitations
 - Comparison of intervention types not an original study objective
 - Data from electronic patient medical records of variable quality

Conclusions

- Unique challenges of each intervention type
- Lessons learned for implementation of interventions within combination intervention strategy for improving HIV care continuum
- Supports growing evidence-base on feasibility and acceptability of health communication interventions



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Thank you

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