Pulling the network together:
The 'microclinic' social network intervention for promoting engagement in HIV care on Mfangano Island, Kenya

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organic
health response

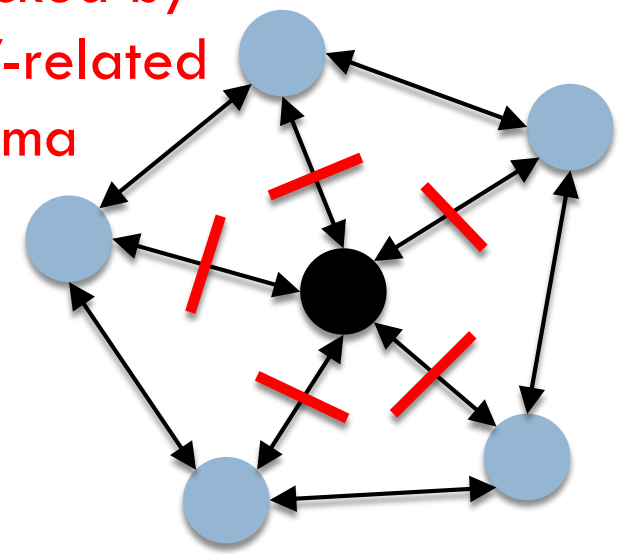
MICROCLINIC
INTERNATIONAL

Retention is important but difficult

Barriers to retention:
- Structural
- Clinic factors
- Psychosocial

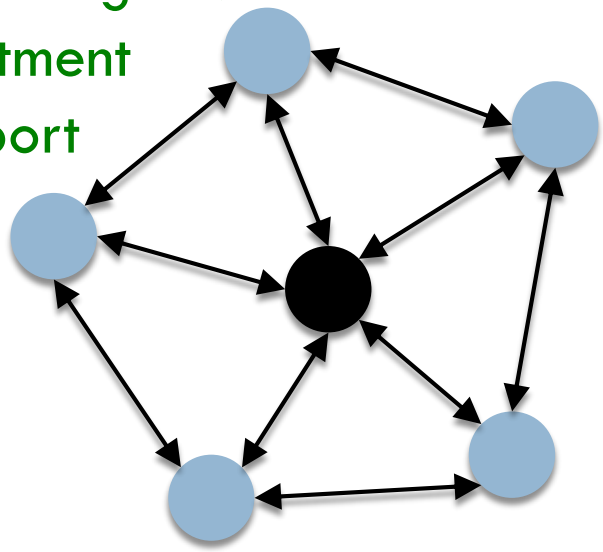
Facilitators of retention: (Ware 2009)
- Social capital

Blocked by HIV-related stigma



Catalyst

Unlocking HIV treatment support



Microclinics

MICROCLINIC INTERNATIONAL

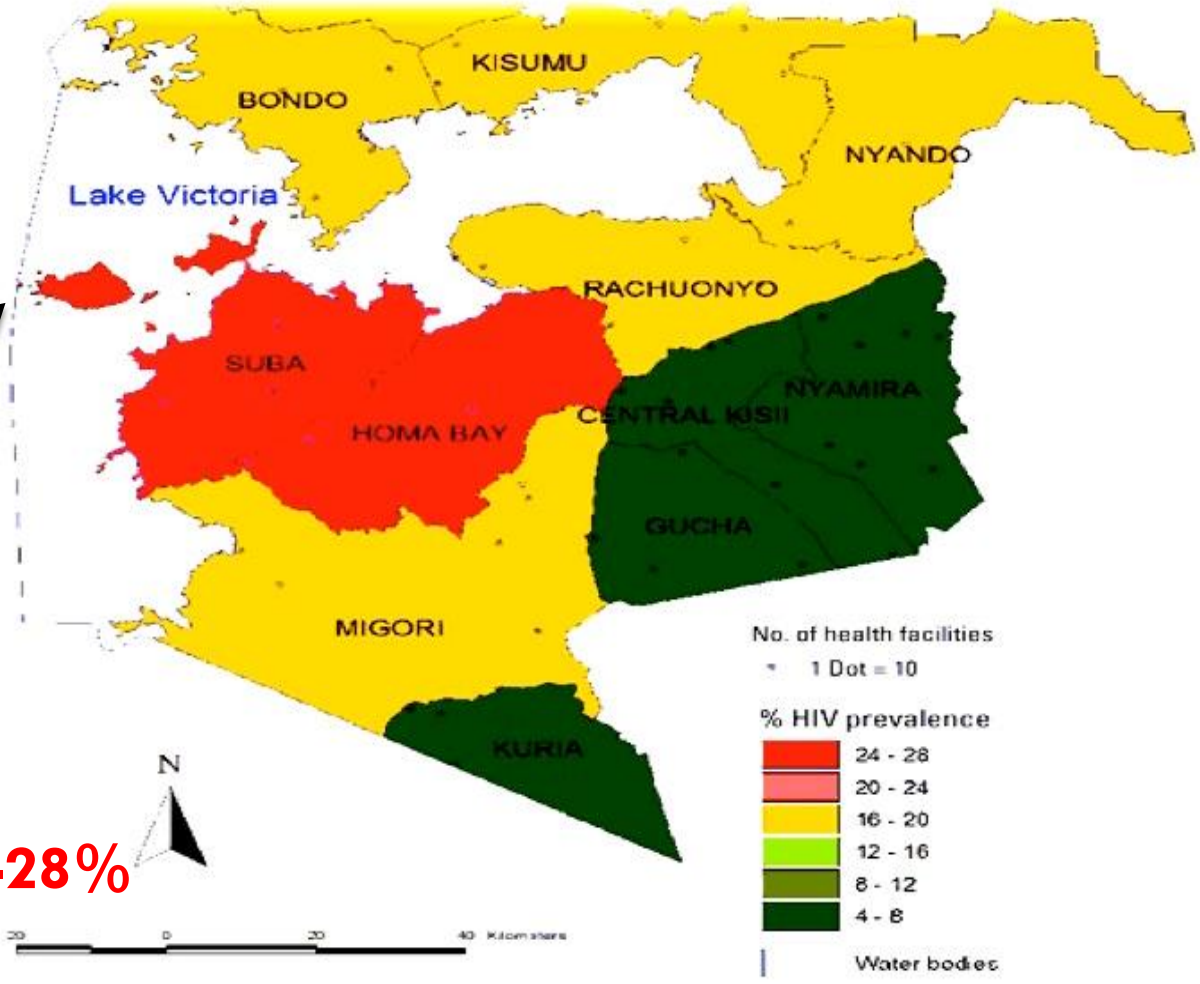
- Activate social networks to collectively address a chronic health challenge
- Recognizes that burden of disease, and solutions for effective management, are shared across social ties

- Diabetes in Jordan
  - RCT showed 1-unit ↓ in HbA1C
  - Scaling up microclinics nationally through MOH
- Obesity in Kentucky
  - RCT showed 1-unit ↓ in BMI sustained over 10 months
  - Scaling across several counties through partnership with CDC

Objectives

1. To evaluate the **feasibility** of a microclinic HIV intervention in a high-prevalence region in rural Kenya
2. To evaluate the impact of microclinics on **engagement in care**
3. To evaluate the impact of microclinics on **medication adherence**

Setting: Mfangano Island, Lake Victoria



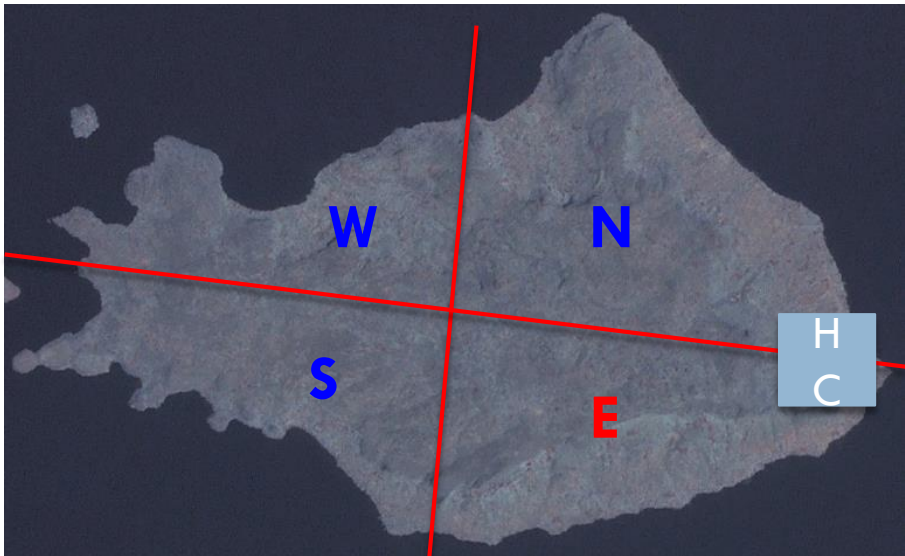
Mfangano Island

HIV prevalence 24-28%

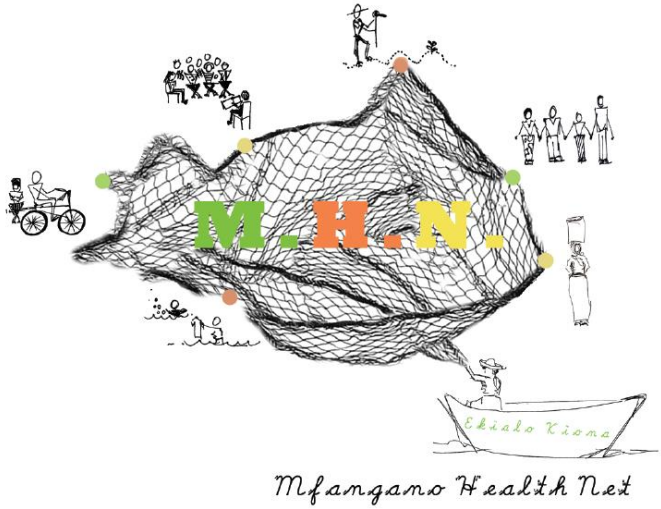
International Medical Corps, 2009 Home Counseling and Testing Survey

Study design

- Quasi-experimental design
- All patients on ART at Sena Health Center
- Patients in East were invited to form microclinic groups
- Patients from North, South and West were control
- ITT analysis



Microclinic intervention



Structure

- Patient-nominated groups
  - Both HIV + and -
- 28 CHWs facilitated group formation
  - 10 bi-weekly group meetings co-led by CHWs and VCT instructors
  - Meetings scheduled at time and location of each group's choosing

Content

- Discussion topics at group meetings:
  - HIV and ART biology
  - Group support strategies & confidentiality
  - Community outreach

Optional final session: Group status disclosure

Measurements

- Clinic visit history obtained from EMR
  - LTFU tracing
  - post-transfer visit history
- Hair samples for drug level measurement
- Participant surveys and FDGs to understand mechanisms
  - Changes in stigma, HIV-related knowledge, social support

Outcomes:

- Engagement in care (90-day gaps, 'time in care')

Analysis: 'time in care'

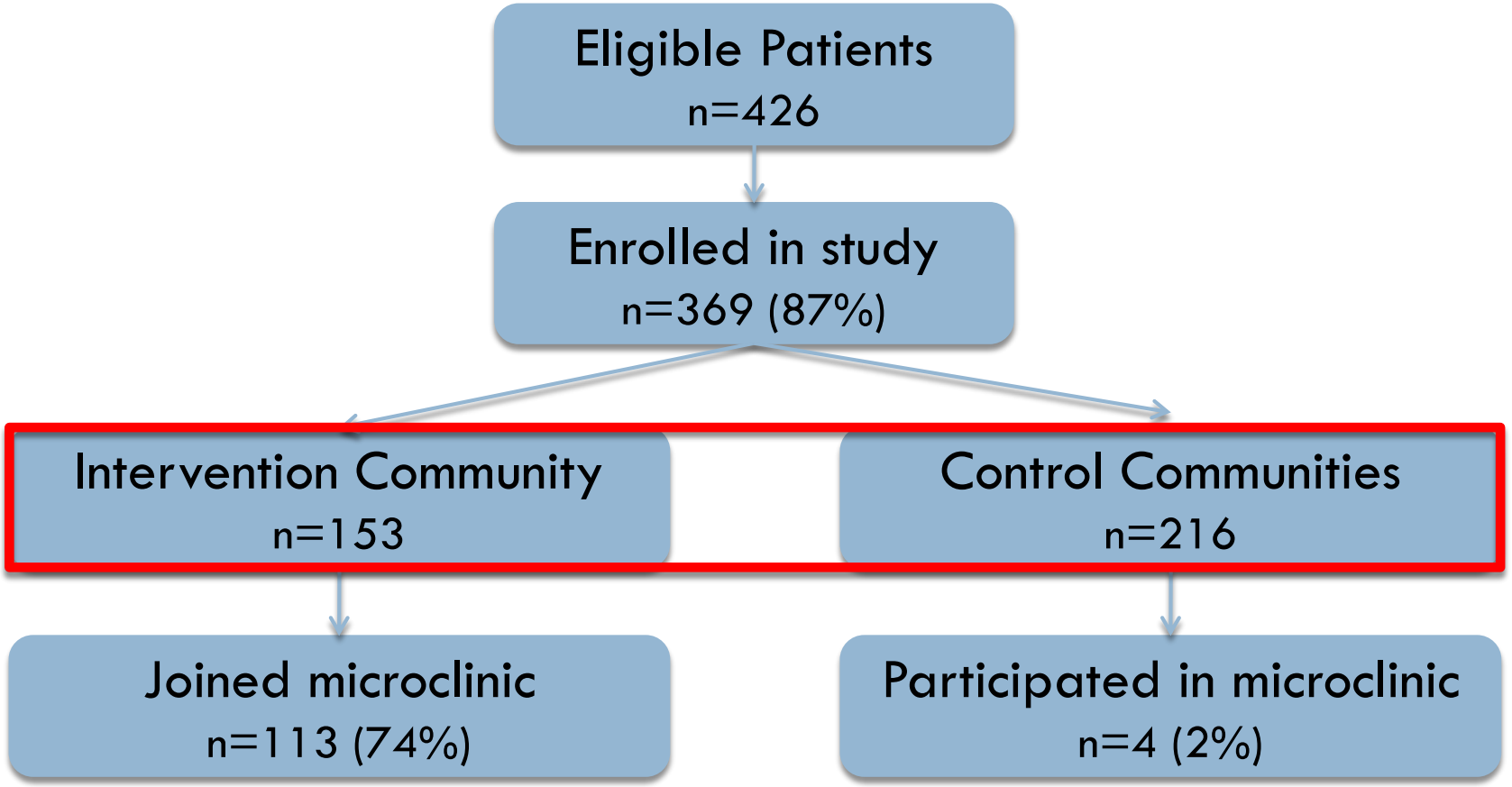
- Conceptually, the amount of time a patient spends adhering to clinic visit schedule
- Allows for discrimination between patients who miss a visit by one week vs. 3 months

$$\frac{\text{(Time eligible for care) – (sum of gaps in care)}}{\text{(time eligible for care)}}$$

Statistical analysis

- Cox proportional hazards model for 90-day disengagement
- GLM logit model for 'time in care'
- Robust SEs to adjust for clustering
- Baseline covariates evaluated for inclusion in multivariate models:
  - age, sex, monthly income, distance to clinic, food insecurity, stigma, social support, HIV knowledge, time since ART initiation, CD4 count, WHO stage

Study enrollment



Baseline characteristics

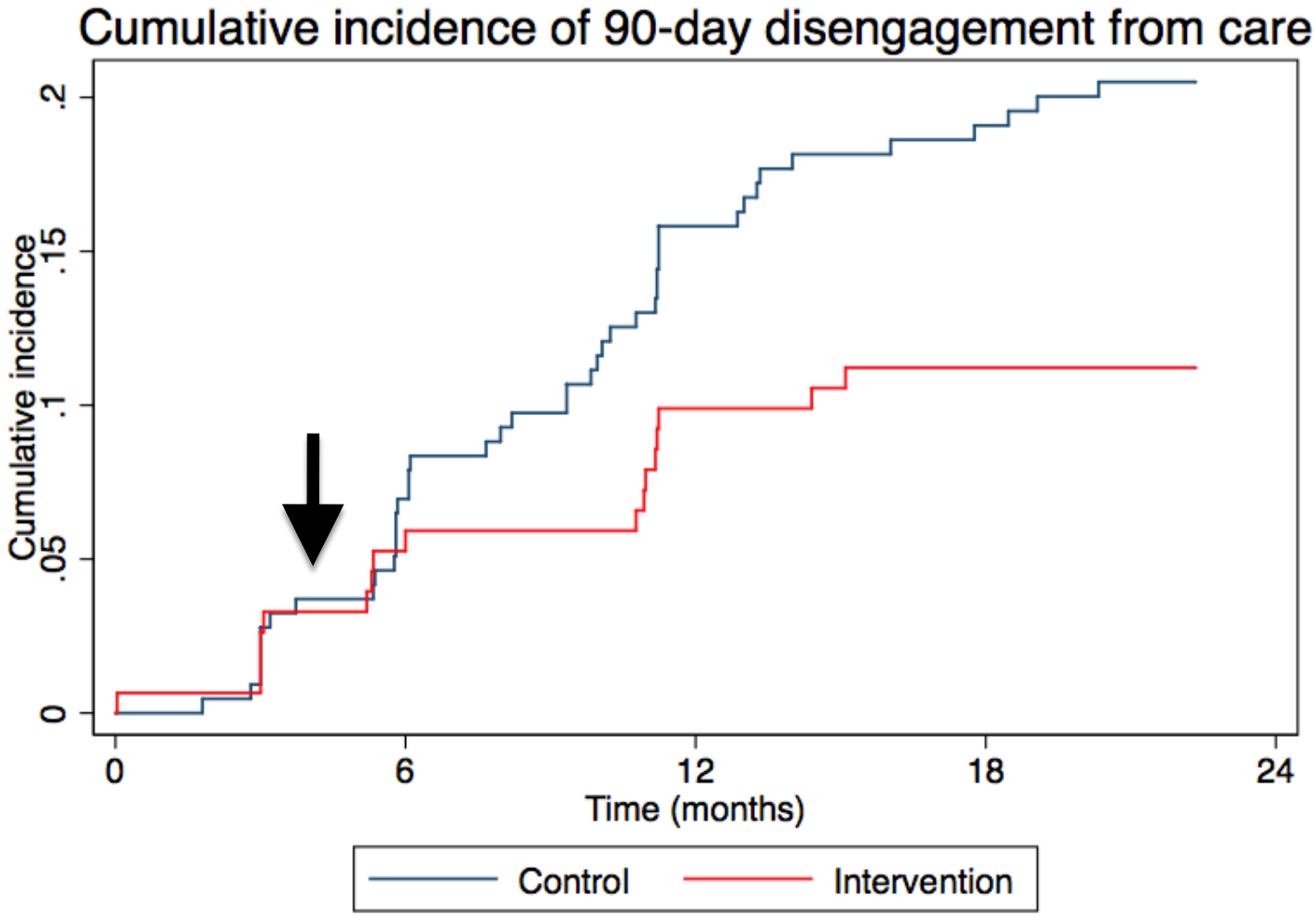
Characteristic	Intervention (n=153)	Control (n=216)	P-value
Age (years, median)	37	37	0.40
Female (%)	63%	64%	0.85
Monthly income (USD, median)	$31	$31	0.09
Travel time to clinic (%)			<0.001
<30 min	49%	13%	
30-60 min	30%	37%	
>60 min	21%	50%	
Time on ART (years, median)	2.6	2.5	0.5
Baseline CD4 (mean, cells/mm3)	415	372	0.05

education, marital status, stigma, HIV knowledge, social support, WHO stage were all similar

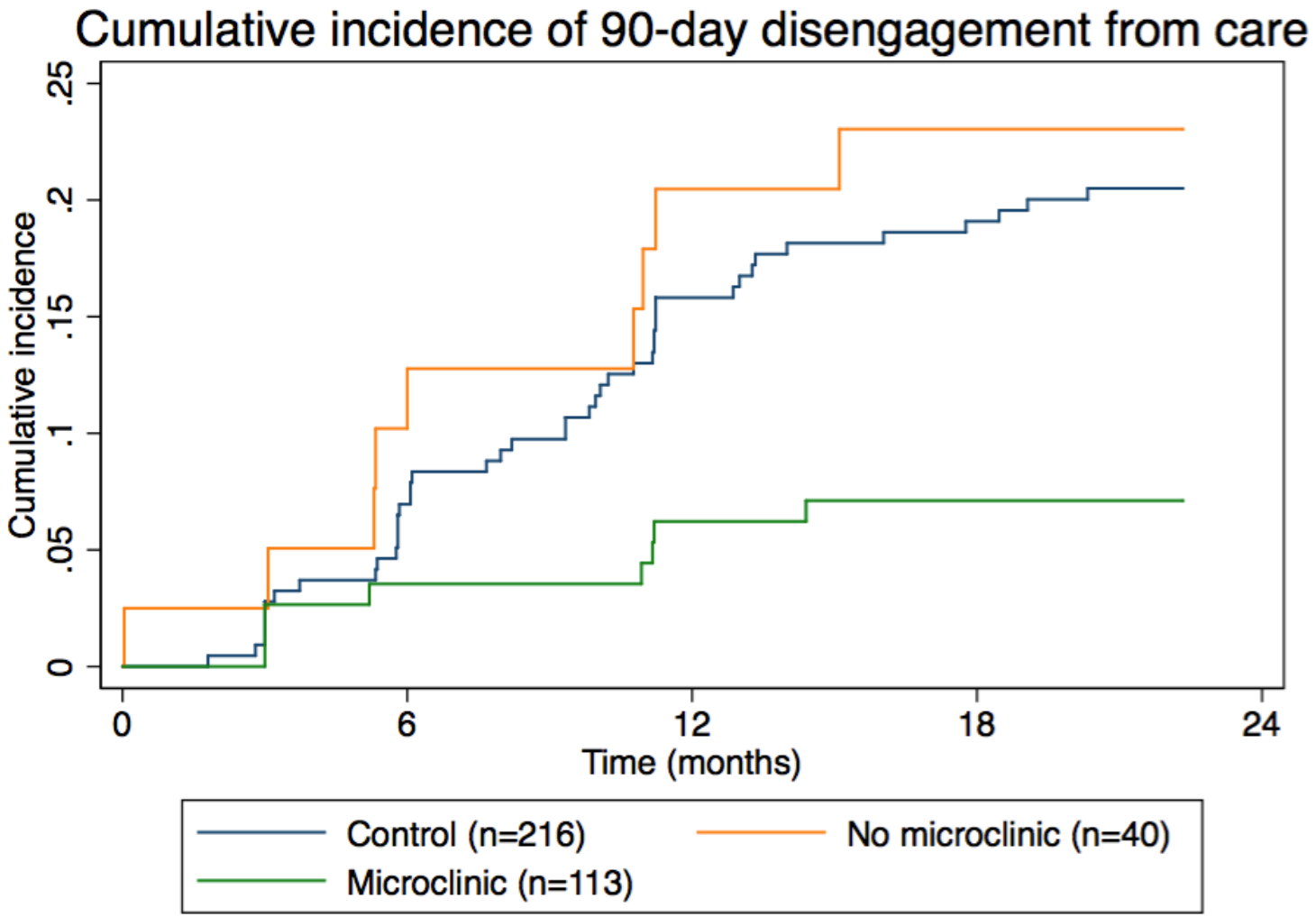
Group characteristics (n=34)

Group characteristic	Median (IQR)	Range
Group size	13 (10-14.5)	4-18
Female (%)	78% (62-92%)	0-100%
Group VCT participation (%)	86% (78-92%)	40-100%
HIV-infected	43% (25-62%)	14-86%
Number HIV+	4 (2-8)	1-12
Number on ART	**2 (1-5)**	**1-10**

Fewer disengagement from care events in intervention community



As treated analysis



Cox proportional hazards model

Characteristic	Hazard Ratio	p-value	Robust 95% CI
Univariate model			
Intervention arm	**0.53**	**0.056**	**0.28 - 1.02**
Multivariate model			
Intervention arm	**0.48**	**0.026**	**0.25 - 0.92**
Per year of ART experience	0.80	0.007	0.68 - 0.94
Travel time to clinic (%)			
<30 min	ref	ref	ref
30-60 min	0.60	0.13	0.30 - 1.2
>60 min	0.70	0.29	0.36 - 1.4

Three weeks more ‘time in care’ per patient-year

Marginal risk differences (derived from logistic model)

Characteristic	Additional time in care (days)	Robust 95% CI (days)
Univariate model		
Intervention arm	**17**	**3 - 31**
*Multivariate model**		
Intervention arm	**22**	**10 - 34**

* Adjusting for time since ART initiation, travel time to clinic, baseline HIV-related stigma

Selected themes from focus groups

- **Group cohesion following group disclosure**
  - Male participant: When kanyaklas went through group VCT, it helped a lot because we found that *my status is not mine alone*.
- **Support for defaulters and medication adherence**
  - Female participant: I happen to have a friend who was on drugs but was swayed by religious beliefs. She met some people who prayed for her and told her she was healed, thus should not continue with the drugs. It did not take long when the lady fell sick and was bedridden. We went to her home with few kanyakla members and took her to the hospital. The lady is really doing very well today.
  - CHW leader: I noticed my kanyakla helping a member who had a side effect that made him default from taking his medications. So a group visited him and taught him and from there he got back to care.

Discussion: engagement in care

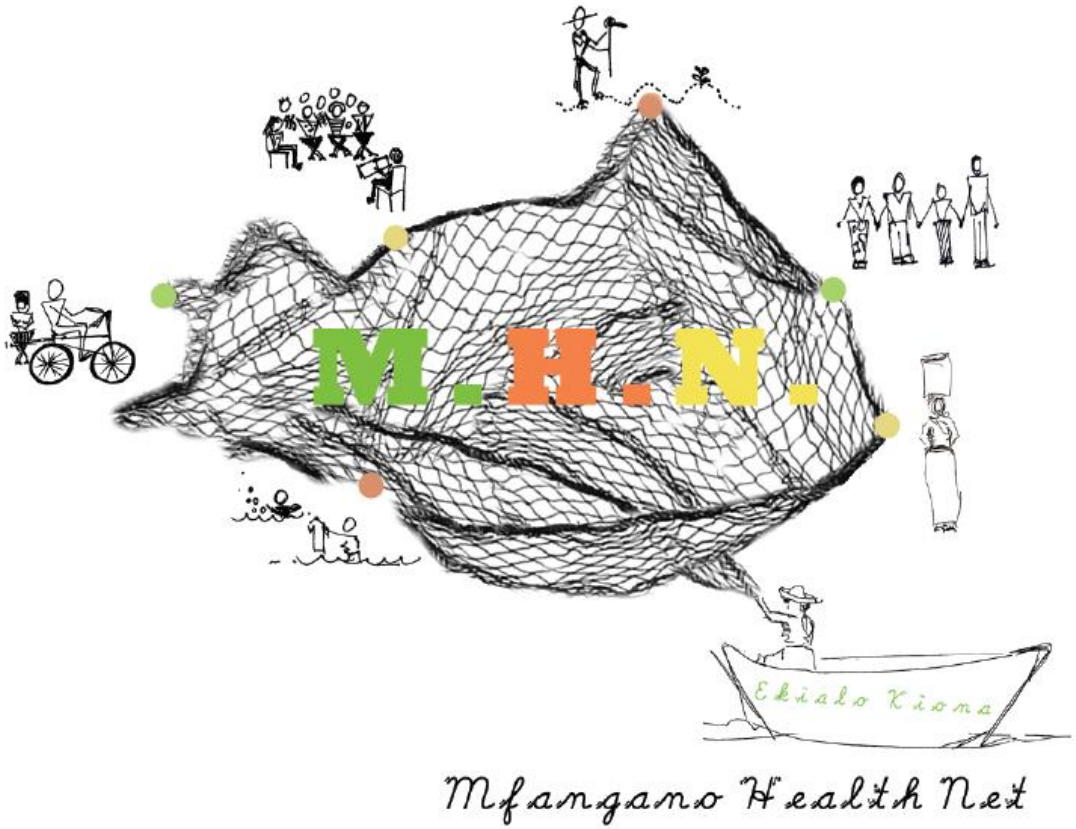
- 50% reduction in 90-day gaps in care & 3 weeks of additional 'time in care' per person-year
  - Near complete follow-up (ltfu=5), including through transfers strengthens evidence that these are true gaps
  - ITT analysis minimizes selection bias
- Clinical relevance
  - Gaps in care associated with morbidity, mortality and virologic failure (Kranzer 2011)
  - Other engagement measures (e.g. visit adherence) also associated with virologic suppression (Mugavero 2012)

Conclusion

- Microclinics are a promising intervention for promoting engagement in care
  - Good uptake among patient population on Mfangano
- Embedded in social infrastructure - may be more sustainable than other similar interventions
  - Treatment supporters
  - Patient support groups
- Social network impact beyond individual patients

Next steps

- RCT of microclinic intervention in 8 rural clinics across 3 islands in Lake Victoria



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Extra slides

GLM logistic 'time in care' model

Characteristic	Odds Ratio	p-value	Robust 95% CI
Univariate model			
Intervention arm	**1.41**	**0.02**	**1.05 - 1.90**
Multivariate model			
Intervention arm	**1.57**	**0.001**	**1.21 - 2.03**
Per year of ART experience	1.11	0.004	1.04 - 1.20
Travel time to clinic (%)			
<30 min	ref	ref	ref
30-60 min	1.52	0.01	1.09 - 2.10
>60 min	1.32	0.08	0.97 - 1.81
HIV-related stigma (per 1-pt increase on 17-point scale)	0.97	0.07	0.94 - 1.00