Can Community Health Workers improve lives?
Hope pervades HIV community
Yet, there are many hurdles; South Africa Tx cascade.

24.7% tested for HIV & know results

83% linked to care
vs. 41% in Eastern & Southern Africa

62% have achieved viral suppression
vs. 25% in sub-Saharan Africa

71% of HIV patients adherent
vs. 77% in sub-Saharan Africa
Fickle global donor community that recognizes the role of non-communicable diseases.

87% of global funding = HIV

200,000 AIDS-related deaths (< 40%)

66% of deaths worldwide = NCDs
Behavioral interventions which have failed to be

Cost-effective
Useful
Realistic
Evolve with time
Sustainable.
Our current scientific norms limit ability to provide CURES.

- PI driven models
- Manual-based training
- Not responsive to context
- Replication with fidelity
- Female models of tend/befriend
- Interpersonal
Prevention scientists are often like architects who design custom houses, unique for each setting.
Each EBI builds its own structure, process, & content.
Each existing EBI is unique & special, “over-serving the needs” of families.
Disruptive Innovations are simpler, cheaper, & *good enough* solutions.
A model for conceptualizing a training model to diffuse evidence-based interventions.
4 million Community Health Workers (CHW) are poorly trained & provide inconsistent care.
Philani founded in 1979 in the Cape Town townships

Accountability
Visit all homes
Connect with families
Carry entre task
Community ties & decision making
Weak: Behavior change theory
CHW (Mentor Mothers) are at the core of Philani’s program.
Three innovations
Build our MM’s skills & quality:

Selection
Training
Monitoring
Mobile phones are used throughout all aspects of the project.

Collect research data

Monitor place, time, & content of intervention delivery

Provide MM & their supervisor data on content, process, & outcome.
Mobile phones help CHW to provide effective support & monitoring.
Mentor Mothers visit every household, clicks her phone on entry, indicates content, & gives feedback at end.
Target challenge: 14% underweight; 30%, HIV+; 6.5% Fetal Alcohol Syndrome.
Figure 1: Movement of participants through the RCT at assessment points comparing mothers in a control condition and a home visiting intervention.

Randomize neighborhoods (N=24)  
Recruit N=1238 pregnant mothers

12 SC Neighborhoods  
n=594 pregnant mothers

12 PIP Neighborhoods  
n=644 pregnant mothers

Baby's Birth

PHILANI+: Antenatal Visits  
n= 4 visits

18-month assessment  
n=496/541 (91.7%)  
Maternal deaths: n=1  
Infant deaths: n=52

36-month assessment  
n=456/530 (86%)  
Maternal deaths: n=2  
Infant deaths: n=1

PHILANI+: Post-natal Visits  
n= 4 visits

18-month assessment  
n=543/595 (91.3%)  
Maternal deaths: n=6  
Infant deaths: n=43

36-month assessment  
n=502/592 (84.8%)  
Maternal deaths: n=7  
Infant deaths: n=4
Assessments at Baseline, Post-Birth, 6, 18, and 36 months

- 5 completed: 80.6%
- 4 completed: 91.4%
- 3 completed: 95.6%
- 2 completed: 98.9%
Follow-up Rates
(N=1238)
Figure 2. Approximate location and size of four Cape Town settlements in relation to major highways and coastline. (Map construction is based on google maps to provide approximate representation of location and size of four study settlements.)
Randomization worked well. Neighborhoods were highly similar.

Shebeens
Size
Density
Water sources
Formal / informal housing
Rates of HIV
Migration history
Mothers were highly similar across conditions.

- Age,
- Education
- Income
- Number of previous children
- Low Birth Weight previously
- HIV status
- Partnerships
Baseline Characteristics of MLH and MWOH

- Alcohol
- AUDIT > 2

- HIV +
- HIV -
Baseline Characteristics of MLH and MWOH

EPDS > 13

%
Linked to Care

- Perinatal 83.5%
- 6 months 46.5% (68% ARV)
- 18 months 54.5% (87% ARV)
- 36 months 66% (80% ARV)
Disturbing

- HIV + Status (control group)
  - Antenatal 32%
  - 36 months +5%

- Deaths
  - Maternal (35/140) 25%
  - Infant 8.9%
HIV+ Mothers: Infant Health At 18 Months

- Weight-for-age z-score ≤ -1*: 27.7% SC, 17.9% PIP
- Height-for-age z-score ≤ -2*: 16.9% SC, 8.4% PIP
- Treated at clinic: High fever*: 24.6% SC, 13.2% PIP

*Significant at the 5% level.
Intervention work??
Figure 2. Adherence to cumulative behaviours in the PMTCT cascade among women living with HIV (WLH, N=354), by intervention condition: Philani Intervention Program (PIP, N=185) vs. Standard Care (SC, N=169).

Key:  
A. Maternal AZT prior to labour, or full ARVs  
B. Maternal AZT during labour, or full ARVs  
C. Maternal NVP at onset of labour, or full ARVs  
D. Infant NVP within 24 hours of birth  
E. Infant AZT dispensed and medicating as prescribed  
F. Infant HIV PCR test and results  
G. One feeding method first 6 months

Note: "+" indicates that the behaviour listed includes itself and all behaviours listed to the left: cumulative adherence.  
*OR=1.95; p<0.001. From random effects logistic regression, adjusting for neighbourhood clustering, controlling for baseline employment.
Alcohol, AUDIT-C>2

- Pregnancy: 18.7%
- 6 month: 8.3%
- 18 month: 9.6%
- 36 month: 17.7%
Figure 3. Among Women Who Reported Drinking Anytime During Pregnancy, Percent Who Engaged in Hazardous Alcohol Use*, Over Time

*Hazardous alcohol use is defined as >4 drinks/day.
Cognitive Function

<table>
<thead>
<tr>
<th>Measure</th>
<th>Intervention Group</th>
<th>Control Group</th>
</tr>
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<tbody>
<tr>
<td>Bayley &gt; 85: 18 months</td>
<td>89.3%</td>
<td>92.5%</td>
</tr>
<tr>
<td>Executive Functioning: 36 months</td>
<td>26.1%</td>
<td>25.7%</td>
</tr>
<tr>
<td>PPVT: 36 months</td>
<td>20.0%</td>
<td>19.2%</td>
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</tbody>
</table>
Baby nutrition outcomes for the Intervention Condition

Predicted Weight for length z-score of Intervention Infants by Mother's antenatal depression status

- EPDS > 18
- EPDS ≤ 18

**Graph:**
- X-axis: Time
  - Post birth
  - 6 months post birth
- Y-axis: Mean weight for length
  - Values range from -1.00 to 2.00
Among the SC, infants of mothers depressed antenatally have significantly lower HAZ scores at 6 months \((p<0.01)\); however, among the PIP, infants of mothers depressed at baseline do not have significantly different HAZ scores. Looking within mothers depressed during pregnancy, PIP infants have significantly higher HAZ at 6 months \((p<0.01)\), and a significantly more positive change in HAZ between post-birth and 6 months \((p=0.04)\). Note that for \(n=94\) late-entry participants, depression during pregnancy was not assessed. Depression at the time of the late-entry assessment is used as a proxy for antenatal depression.
Mothers Depressed Antenatally (EPDS>18): Infant Health At 18 Months

- **Child had cough last two weeks***: 49.2%
- **Since birth child admitted to hospital***: 30.5%

*Significant at the 5% level.
Feeding Habits Among Mothers Ever Severely Depressed

- **Percent breastfed exclusively first 6 months**: 2.7%
- **Mean months breastfed exclusively**: 2.6
- **Median count of non-breast-milk food items**: 7

*Control*
Among All Subjects: Maternal And Infant Health At 18 Months

- Mother currently diagnosed with hypertension: 8.1% (SC) vs. 4.1% (PIP)
- Child had diarrhoea last two weeks: 24.8% (SC) vs. 17.2% (PIP)

*Significant at the 5% level.
Condom use 10 out of last 10 times:
- SC: 62.0%
- PIP: 76.6%

Method family planning: Condom:
- SC: 31.5%
- PIP: 46.6%

*Significant at the 5% level.
CHW home visitors significantly improve maternal & child health.
We have been reinventing the wheel; what has worked has been the same across EBI.
We know of five innovations which we think consistently improve implementation of CHW

Case assignment
Training model
Contact strategy
Phone & in-person contact
Length of intervention
Healthy families will require:

Synthesize common elements, practices, principles
Experiment with delivery formats
Market strategies to diffuse
Adopt continuous quality improvement
MEN

Not In Women’s Settings
With Women’s Norms
Men are not going to be engaged in female oriented structures.
The Philani Plus Team thanks you.