Paraprofessional Home Visiting to Improve Maternal and Child Outcomes in South Africa: A Randomised Trial

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The Road to Melbourne: Young children born into HIV affected families. New York, May 2013

A man in a hot air balloon looked down and saw a man walking in a field.

He shouted: “hey, you, where am I?”

He looked up and answered: You are in a hot air balloon suspended vertically about 200 feet above the ground with no visible means of descent.”

“Oh, you must be a researcher.”

“Yes, how did you know?”

“You are full of technically correct information that is totally irrelevant to my current situation. “

“Oh, and you must be a policy maker.”

Yes, how did you know?

You do not know where you are; you do not know what to ask to find out what you need; and you are blaming other people for your current situation.

Framing thoughts

- Small scale efficacy/effectiveness versus large scaled up programmes
- Supervision and management
- Survival versus life course well-being (1000 days and the other 5840 days)
- Community health workers central

1 million community health workers in sub-Saharan Africa by 2015

Prabhjot Singh, Jeffrey D Sachs

During the past 10 years, community health workers (CHWs) have emerged as a focal point of international discussions of primary health-care systems. Although lay community-based health workers have been active for at least 60 years, the Millennium Development Goals (MDGs) in 2000 prompted new discussion of how these workers can help to extend primary health care from facilities to communities. CHWs have since been part of an international attempt to revise primary health-care delivery in low-income settings, and CHW programmes have been changed accordingly. Instead of being regarded as unpaid, lightly trained members of the community who focus mainly on health education and provide basic

Before 2000, and in many places until today, CHWs in sub-Saharan Africa were mainly regarded as volunteers who provide a few simple services, mostly in community awareness and disease prevention. However, evidence supports an expanded role of CHWs in community-based case management, and several reviews and guidelines from WHO now recommend the expansion of CHW activities.[2,6,7] In December, 2011, WHO released a 3-year study[6] highlighting the importance of CHWs at the household level. The report builds on other synthesis studies finding that when deployed at scale, CHW activities can have a profound effect on achievement of MDGs 4, 5, and 6.[8–11] The new integral role for CHWs

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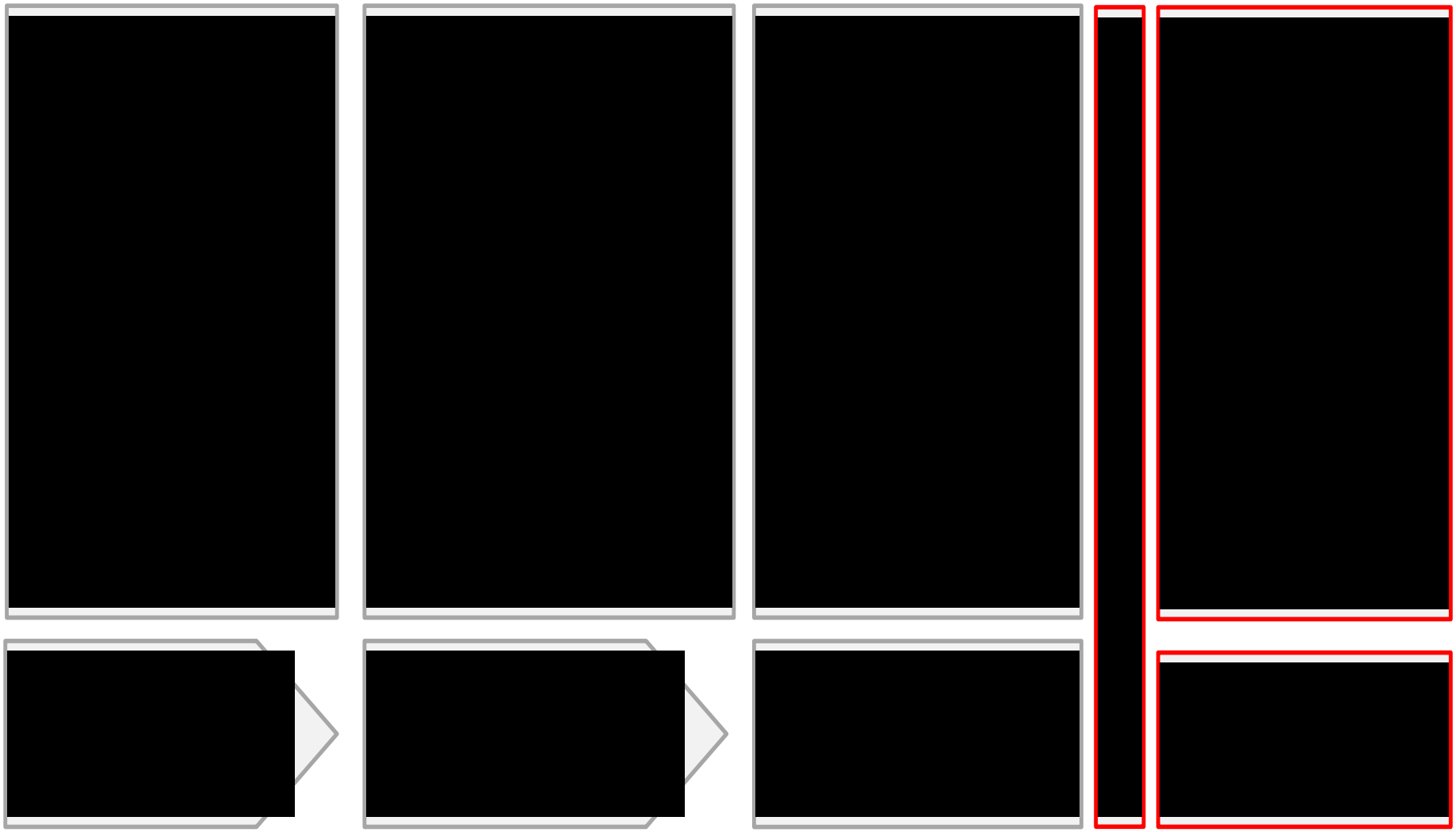
Research stages and standards

(adapted from Olds et al, 2007; and Flay et al, 2005)



Redefining global health-care delivery

Jim Yong Kim, Paul Farmer, Michael E Porter

Initiatives to address the unmet needs of those facing both poverty and serious illness have expanded significantly over the past decade. But many of them are designed in an ad-hoc manner to address one health problem among many; they are too rarely assessed; best practices spread slowly. When assessments of delivery do occur, they are often narrow studies of the cost-effectiveness of a single intervention rather than the complex set of them required to deliver value to patients and their families. We propose a framework for global health-care delivery and evaluation by considering efforts to introduce HIV/AIDS care to resource-poor settings. The framework introduces the notion of care delivery value chains that apply a systems-level analysis to the complex processes and interventions that must occur, across a health-care system and over time, to deliver high-value care for patients with HIV/AIDS and cooccurring conditions, from tuberculosis to malnutrition. To deliver value, vertical or stand-alone projects must be integrated into shared delivery infrastructure so that personnel and facilities are used wisely and economies of scale reaped. Two other integrative processes are necessary for delivering and assessing value in global health: one is the alignment of delivery with local context by incorporating knowledge of both barriers to good outcomes (from poor nutrition to a lack of water and sanitation) and broader social and economic determinants of health and wellbeing (jobs, housing, physical infrastructure). The second is the use of effective investments in care delivery to promote equitable economic development, especially for those struggling against poverty and high burdens of disease. We close by reporting our own shared experience of seeking to move towards a science of delivery by harnessing research and training to understand and improve care delivery.

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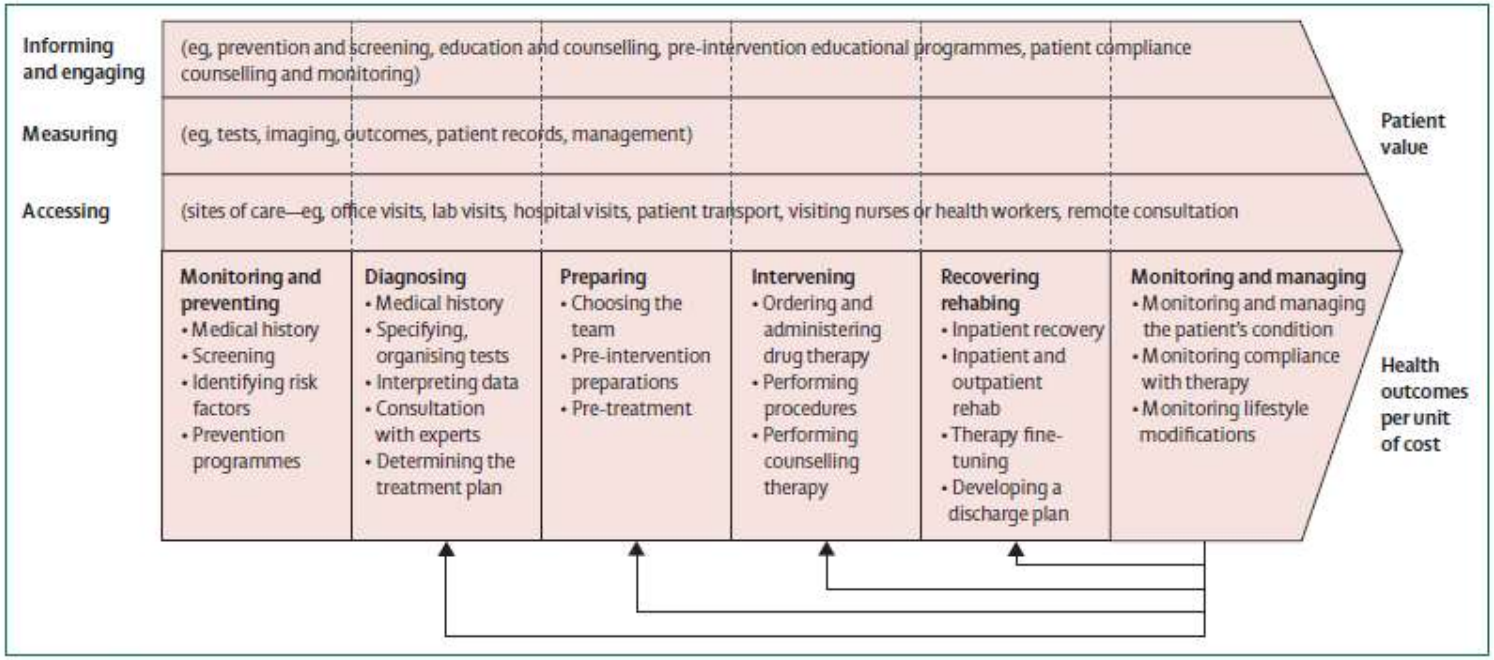
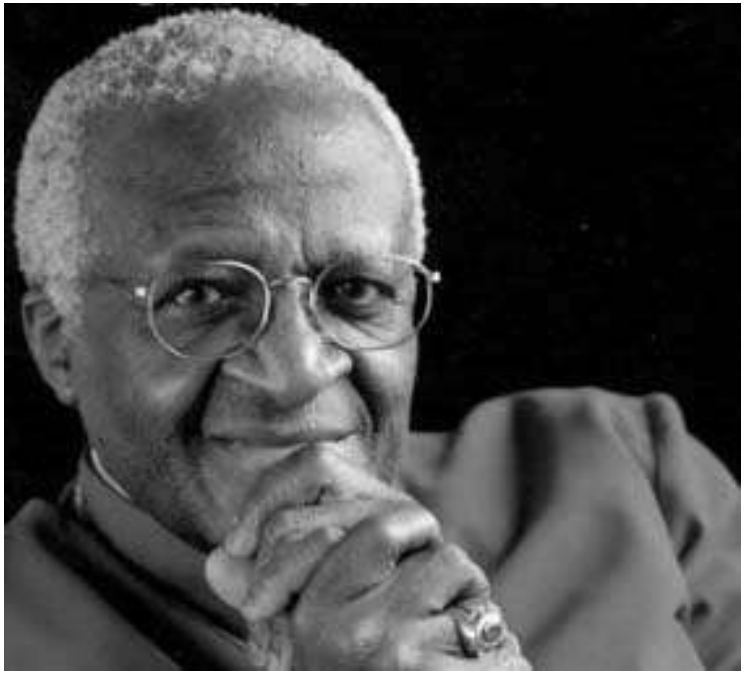
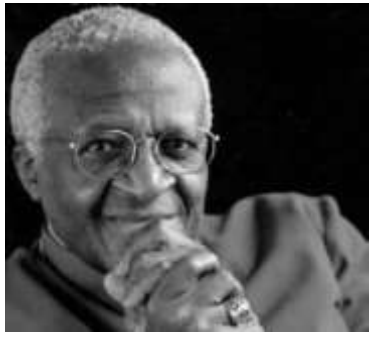


Figure 2: **Care delivery value chain**

Philani has been a community-based agency since 1979 in Cape Town





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NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM

Understanding the impact of alcohol on human health and well-being

Community health workers core to the Philani programme

Programme components

- Selection – positive peer deviants
- Training
- Monitoring
- Ongoing feedback

Method

- Cluster randomized controlled trial
- Khayelitsha and Mfuleni
- One CHW per neighbourhood cluster
- Neighbourhoods 450-500 households

Content and visits

- Content:
  - HIV, PMTCT
  - Nutrition
  - Maternal and child health (including TB)
  - Alcohol use
  - Accessing child grant
  - Maternal mental health
  - Mother-infant relationship and infant communication

- Antenatal and postnatal visit – variable number

Mobile phones

- Collect research data
- Essential supervisory tool
- Monitor place, time and content of intervention delivery
- Provide MM and their supervisor data on content, process and outcome

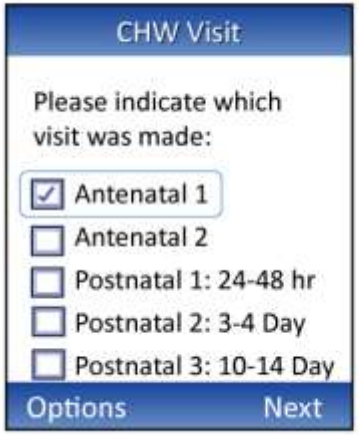
CHW visit scheduling

Nokwezi Zungu

Week **20 Aug - 26 Aug** (4 visits)

Wed	Thu	Fri	Sat	Sun	Mon	Tue
TODAY **1 x AN1 - LATE!**	Aug 21	22	23	24	25 **2 x PN1**	26 **1 x AN1**

Date	ID	Participant	Contact #	Visit Type
20/08/2008	51612	**Anna Poonen** z1305 Umlazi Phase 4	086 551 2145	AN1
25/08/2008	15466	**Margret Ntuli** C6 Umlazi	081 586 4564	PN1
	56421	**Lindi Nkosi** D548 Umlazi	na	PN1
26/08/2008	32416	**Cindy Mothle** B3478 Umlazi	076 541 5555	AN1



10610 - Jane Doe

Overview of participant details and life cycle

Study Arm: INTERVENTION

Enrollment Status: Enrolled

Delivery: Birth took place **23 days, 22 hrs ago** Update Delivery Date

Participant Lifecycle

Antenatal

Recruited	Enrolled	AN1 Visit	AN2 Visit	Delivery
✓	✓	✓	✓	✓
A: 28/04/2009	A: 11/05/2009	S: 09/02/2009 A: 04/05/2009	S: 18/05/2009 A: 11/05/2009	S: 09/06/2009 A: 12/06/2009

Postnatal

Discharge	PN1 Visit	PN2 Visit	PN3 Visit	PN4 Visit	PN5 Visit	12 Week DC
✓	✓	⚠	⚠			
S: 15/06/2009 A: 13/06/2009	S: 15/06/2009 A: 15/06/2009	S: 16/06/2009	S: 23/06/2009	S: 06/07/2009	S: 03/08/2009	S: 04/09/2009

Upcoming Visits and Milestones

Due in the next 4 weeks

Mon	Tue	Wed	Thu	Fri	Sat	Sun
TODAY PN2 Visit **(20 days late)**	7 PN3 Visit **(13 days late)**	8 PN4 Visit	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	August 1	2

Search by Participant NAME or ID

Search

Details

Identifier: **10610**
Study Arm: **INTERVENTION**
Cluster: **1**
CHW Responsible: **Mickey Mouse**
Status: **Enrolled**

Last Milestone Completed: **6/15/2009**
Next Milestone Due: **6/16/2009**

Notes

Add Note **Hide from DCM**

Randomization worked well
Neighborhoods were highly similar

Shebeens
Size
Density
Water sources
Formal / informal housing
Rates of HIV

Mothers were highly similar across conditions

Age
Education
Income
Number of previous children
Previous low birth weight
HIV status
Partnerships

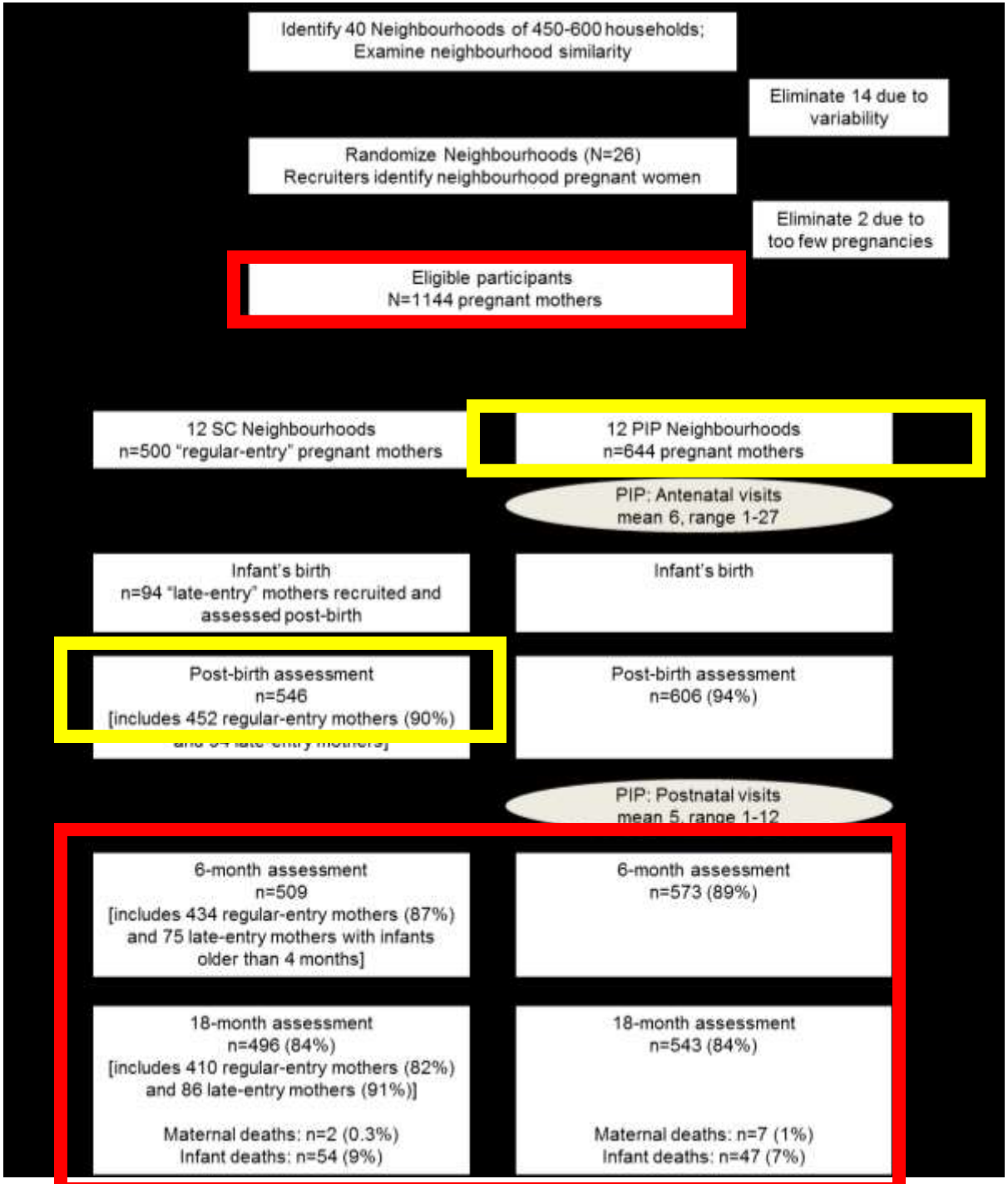
Results - Baseline

29% HIV+

25% Alcohol using

17% Low birth weight

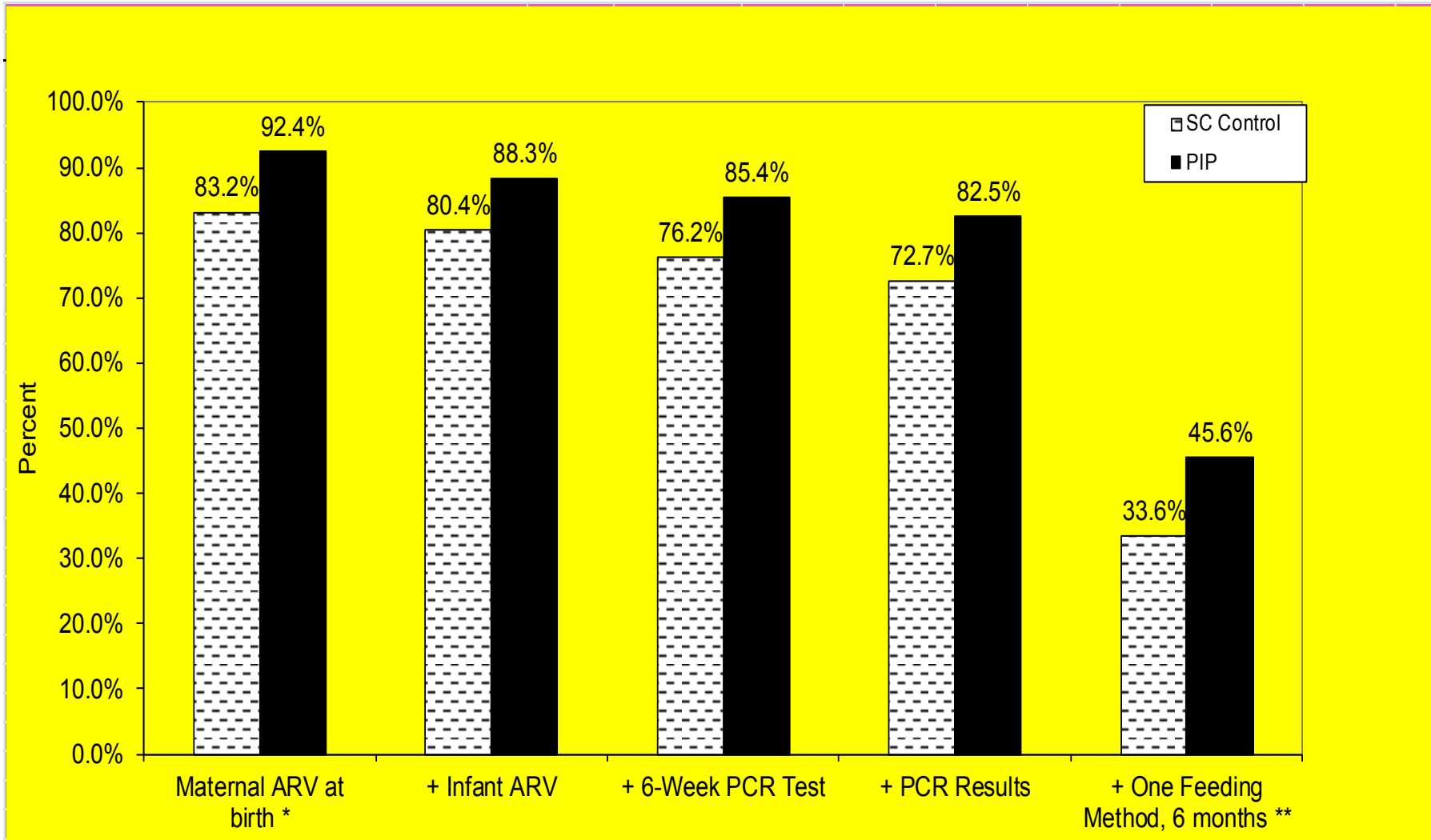
30% Depressed mood


Identify 40 Neighbourhoods of 450-600 households; Examine neighbourhood similarity
Eliminate 14 due to variability
Randomize Neighbourhoods (N=26)
Recruiters identify neighbourhood pregnant women
Eliminate 2 due to too few pregnancies
Eligible participants
N=1144 pregnant mothers
12 SC Neighbourhoods
n=500 "regular-entry" pregnant mothers
12 PIP Neighbourhoods
n=644 pregnant mothers
PIP: Antenatal visits
mean 6, range 1-27
Infant's birth
n=94 "late-entry" mothers recruited and assessed post-birth
Infant's birth
Post-birth assessment
n=546
[includes 452 regular-entry mothers (90%)
Post-birth assessment
n=606 (94%)
PIP: Postnatal visits
mean 5, range 1-12
6-month assessment
n=509
[includes 434 regular-entry mothers (87%) and 75 late-entry mothers with infants older than 4 months]
6-month assessment
n=573 (89%)
18-month assessment
n=496 (84%)
[includes 410 regular-entry mothers (82%) and 86 late-entry mothers (91%)]
Maternal deaths: n=2 (0.3%)
Infant deaths: n=54 (9%)
18-month assessment
n=543 (84%)
Maternal deaths: n=7 (1%)
Infant deaths: n=47 (7%)

Demographics

	PIP (N=644) n (%)	SC (N=594) n (%)	Total (N=1238) n (%)
Demographic Characteristics			
Mean age (SD)	26.5 (5.5)	26.3 (5.6)	26.4 (5.5)
Mean highest education level (SD)	10.3 (1.8)	10.3 (1.8)	10.3 (1.8)
Married or lives with partner	377 (58.5)	324 (54.6)	701 (56.6)
Ever employed	129 (20.0)	104 (17.5)	233 (18.8)
Monthly household income >2000 Rand	280 (45.6)	279 (48.1)	559 (46.8)
Formal housing	197 (30.6)	191 (32.2)	388 (31.3)
Water on site	333 (51.7)	327 (55.1)	660 (53.3)
Flush toilet	340 (52.8)	343 (57.7)	683 (55.2)
Electricity	569 (88.4)	543 (91.4)	1112 (89.8)
Mother hungry past week			613 (49.5)
Children hungry past week			360 (29.1)

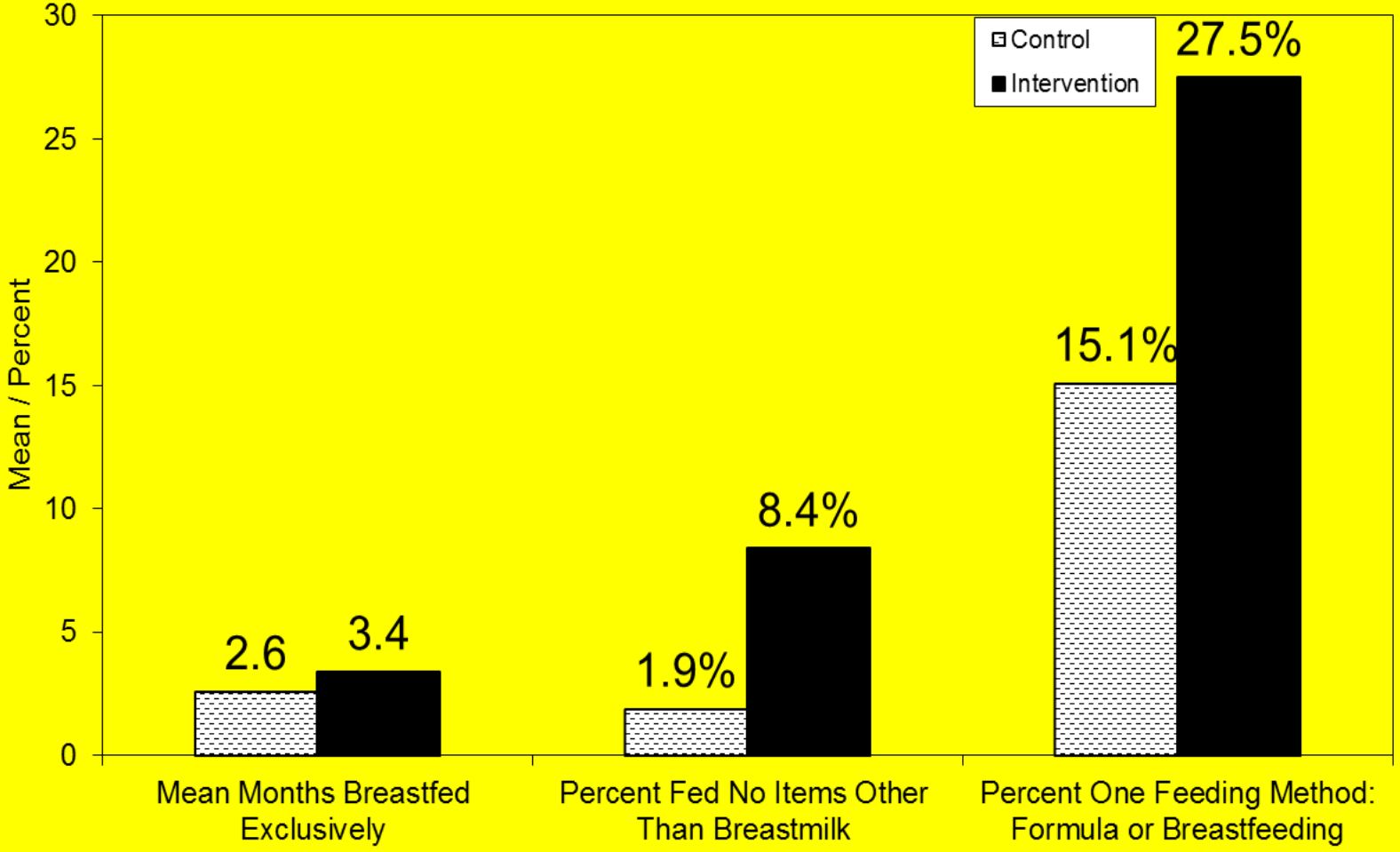
Adherence across the PMTCT cascade



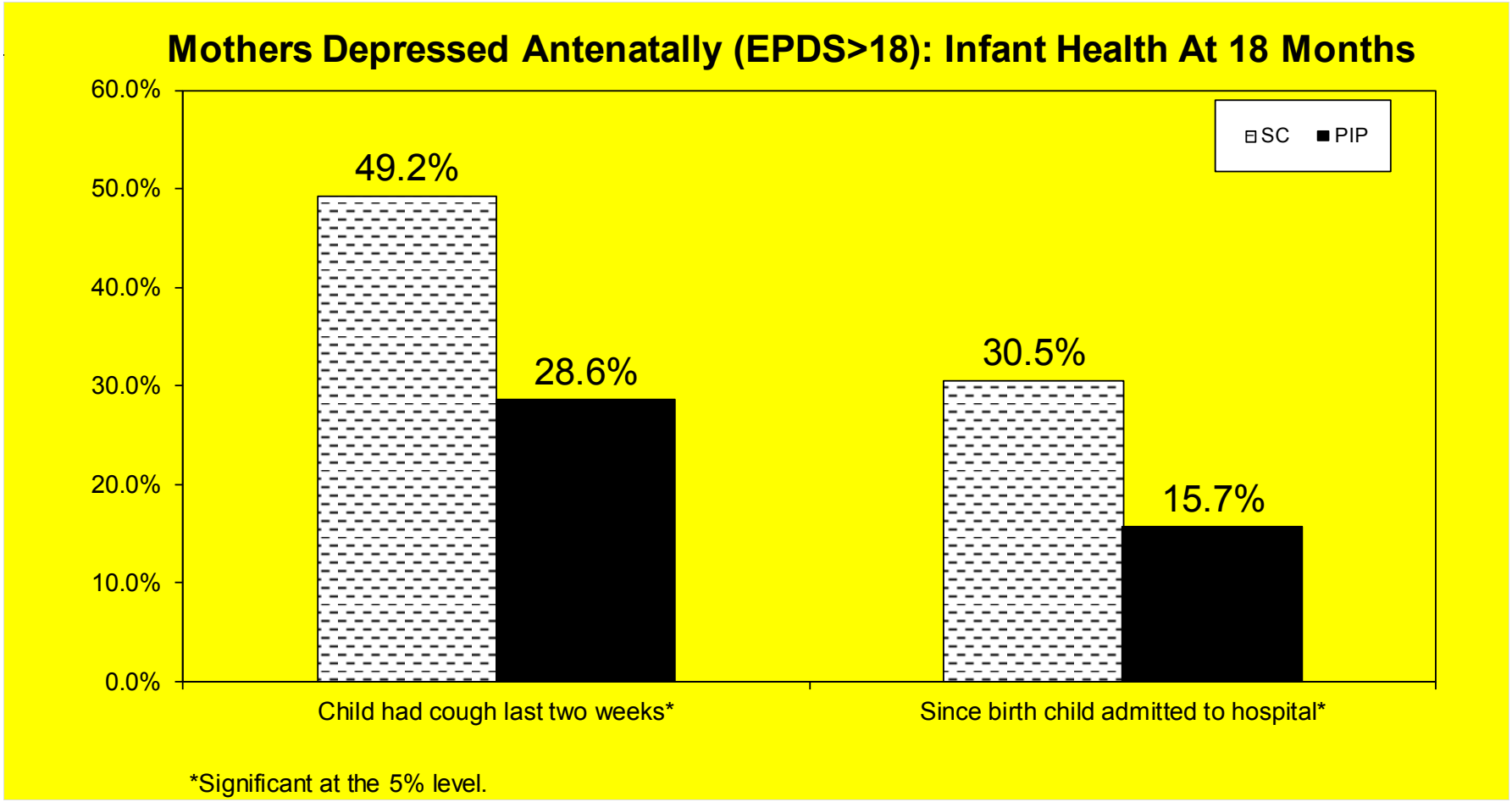
*p<.05, **p<.01

Ie Roux, I., Tomlinson, M., Mbewu, N., et al (2013). AIDS.

Feeding at 6 months



Maternal antenatal depression and infant health at 18 months



Discussion

- Modest, but significant differences, in each area addressed

- Small gains often become magnified over time.

1. Pregnancy and infancy are critical developmental phases with lifelong consequences. Verplanken and Wood (2006) – easier to shift behaviour during life transitions.

2. Small changes that can become habits have substantial impact over time

Discussion

- In the context of a horizontally/diagonally integrated programme with potential to scale
- Generalist approach – family wide impact
- Training, supervision and management
- Task shifting approach
- Tailored to most salient health risks

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THANK YOU

ENKOSI

Enkosi. Dankie. Kiitos! Zikomo kwambiri! Asante sana, Ye dewaese pii! Merci beaucoup! cảm ơn bạn! Obligado! Cam on! Kea leboga, Siyabonga! спасибо