Community Health Workers and child health: implications for South Africa

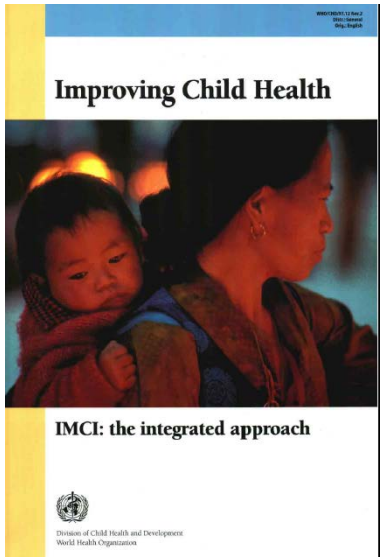
Professor Tanya Doherty

SAMRC and UWC SoPH

Why should interventions be delivered in community settings?

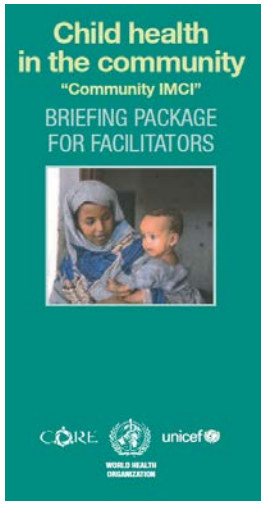
- Many child deaths occur outside health facilities (52% in SA)
- Currently the **coverage** of many effective interventions is low — well under 50% in many cases e.g. breastfeeding, ORS
- Children from poor families and those living in rural areas are less likely to access health facilities than those from wealthier families and urban families- 32% of quintile 1 households travel more than 30 mins to reach a clinic

Policy shifts



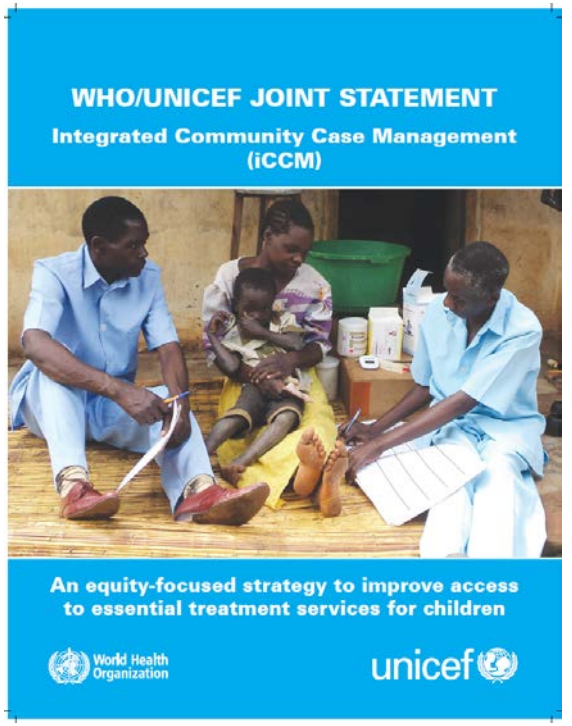
1997
WHO/UNICEF endorse IMCI

1998
C-IMCI



Implementation, funding and support for IMCI wanes, stagnant coverage for major causes of child death, large equity gaps within countries

2012
WHO/UNICEF issue joint statement on iCCM



What is iCCM?

- Disease management algorithm adapted from IMCI
- Includes promotion of key family and community health practices
- Refer serious or complicated cases to first line health facilities
- Supervised by IMCI-trained health care staff
- Supplied by front-line health facilities implementing IMCI

Scale up of iCCM

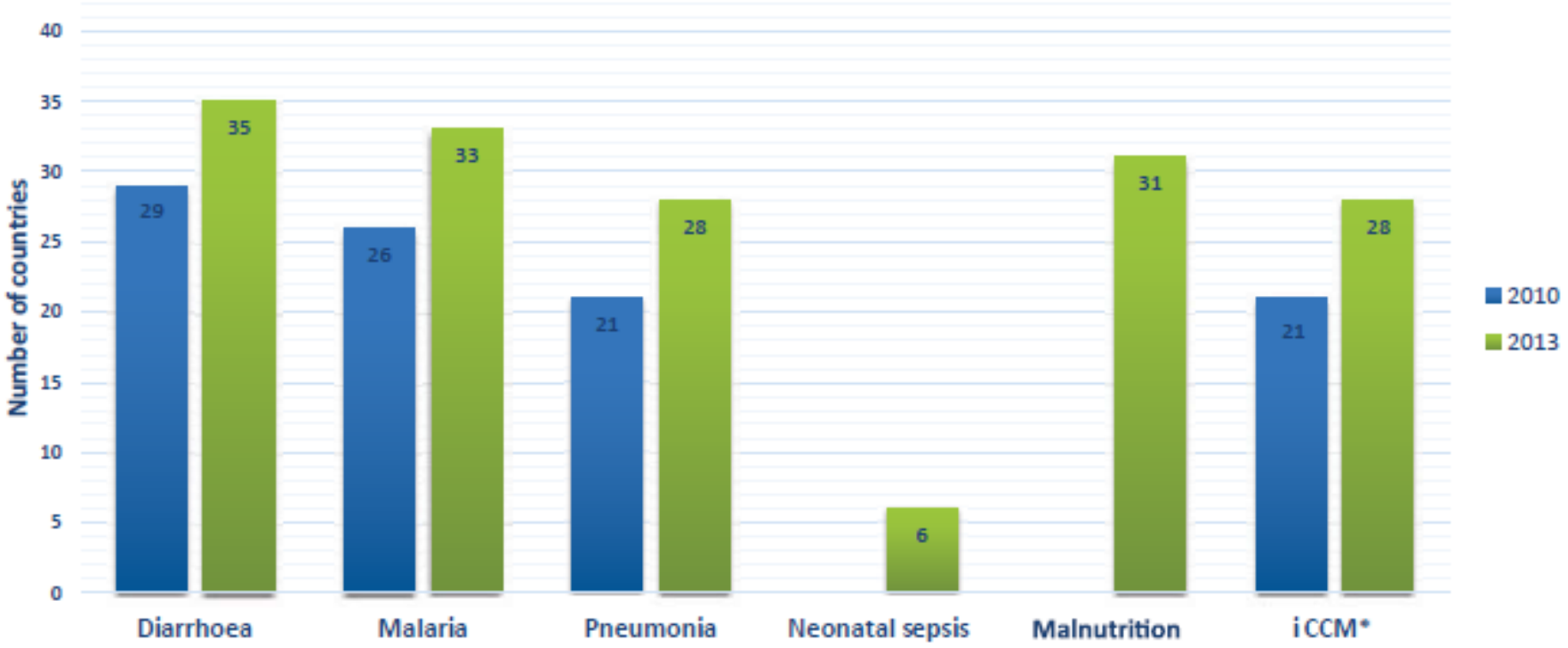


Figure 1. Implementation of community case management (CCM) of diarrhoea, malaria, pneumonia, neonatal sepsis and malnutrition in sub–Saharan Africa (n = 42). iCCM* refers to community case management services for diagnosis and treatment of pneumonia, diarrhoea and malaria that are provided together. There was no data for neonatal sepsis and malnutrition in the 2010 survey.

28 of 42 countries in sub Saharan Africa have implemented iCCM

Rasanathan et al. Journal of Global Health 2014

Community case management (CCM) - Pneumonia

Components of CCM

- Based on simple signs - fast breathing and chest indrawing
- Oral antibiotic
- Parents trained to recognize symptoms of pneumonia and danger signs
- CHWs trained to assess, diagnose and treat

Simplified treatment, Empowered HW, families

Mortality impact of CCM

	% Mortality Reduction	
	Pneumonia Mortality	Total Mortality
Neonates	42% (22-57)	27% (18-35)
Infants	36% (20-48)	20% (11-28)
Children 0-4 yr.	36% (20-49)	24% (14-33)
	35%	21%

Sazawal & Black 2003

Community-based newborn care

- Substantial evidence for impact of home-visit packages on care-seeking, caring practices, morbidity and mortality of neonates – including from South Africa

Table 3 Effect on primary outcomes

	Control	Intervention	Relative risk (95% CI)	ICC
Exclusive breastfeeding				
24 h – overall (%)	252/1693 (14.9)	430/1373 (28.6)	1.92 (1.59–2.33)	0.03
HIV-positive mothers (%)	101/639 (15.8)	130/405 (24.3)	1.53 (1.22–1.94)	
HIV-negative mothers (%)	151/1054 (14.3)	300/968 (30.1)	2.16 (1.71–2.73)	
P-value homogeneity				
$P = 0.019$				

Package of 2 antenatal and 5 postnatal home visits in an urban township led to doubling of EBF at 12 weeks

Tropical Medicine and International Health doi:10.1111/tmi.12257
VOLUME 19 NO 3 PP 256–266 MARCH 2014

Goodstart: a cluster randomised effectiveness trial of an integrated, community-based package for maternal and newborn care, with prevention of mother-to-child transmission of HIV in a South African township

Mark Tomlinson[1], Tanya Doherty[2,3], Petrida Ijumba[2,4], Debra Jackson[2,3], Joy Lawn[5], Lars Åke Persson[4], Carl Lombard[6], David Sanders[3], Emmanuelle Daviaud[2], Lungiswa Nkonki[2], Ameena Goga[2], Sarah Rohde[2], Deborah Sitrin[4], Mark Colvin[7] and Mickey Chopra[3,8]

Meta-analysis of 9 trials shows a 21% reduction in NMR through antenatal and postnatal home visits

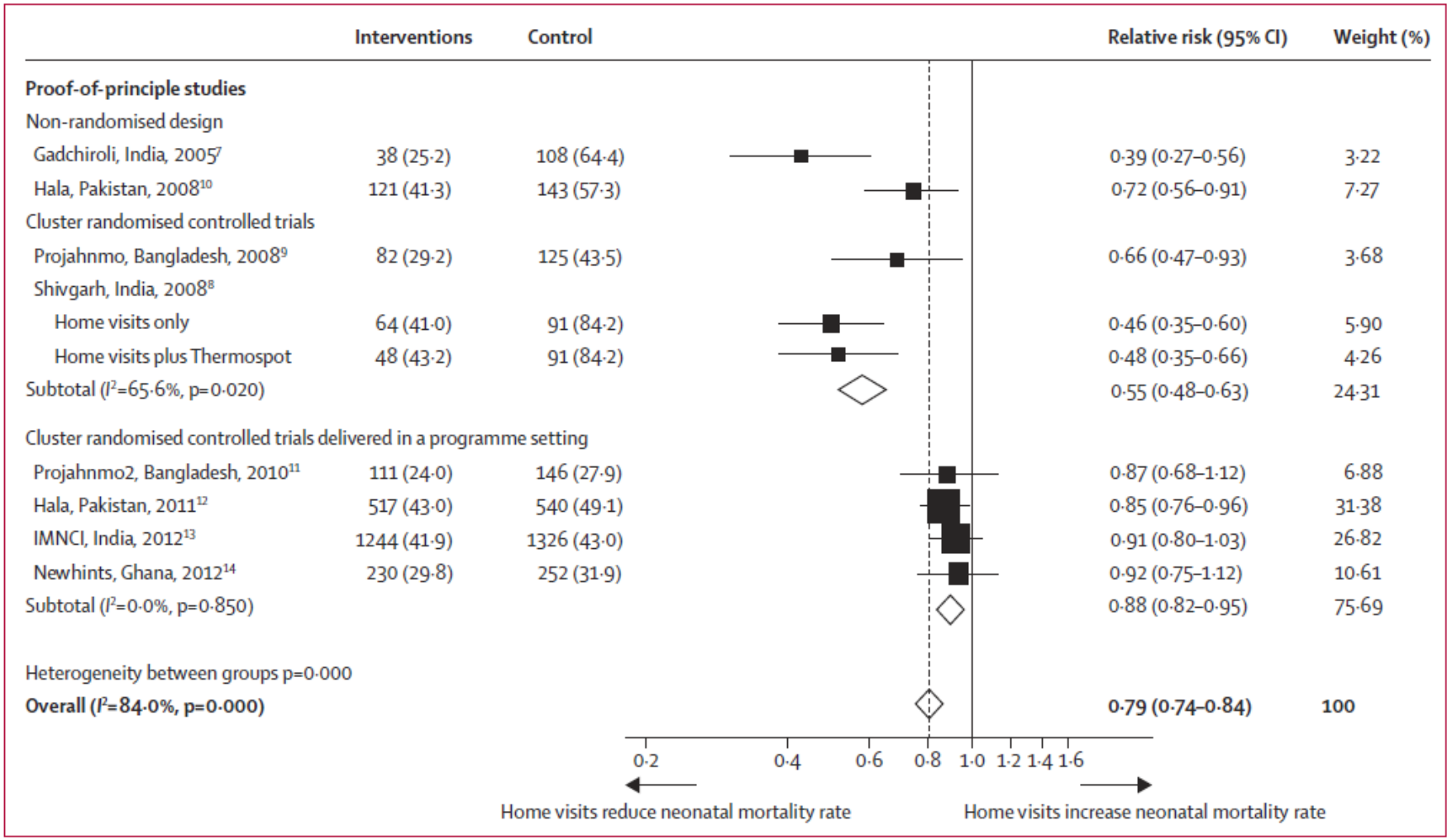
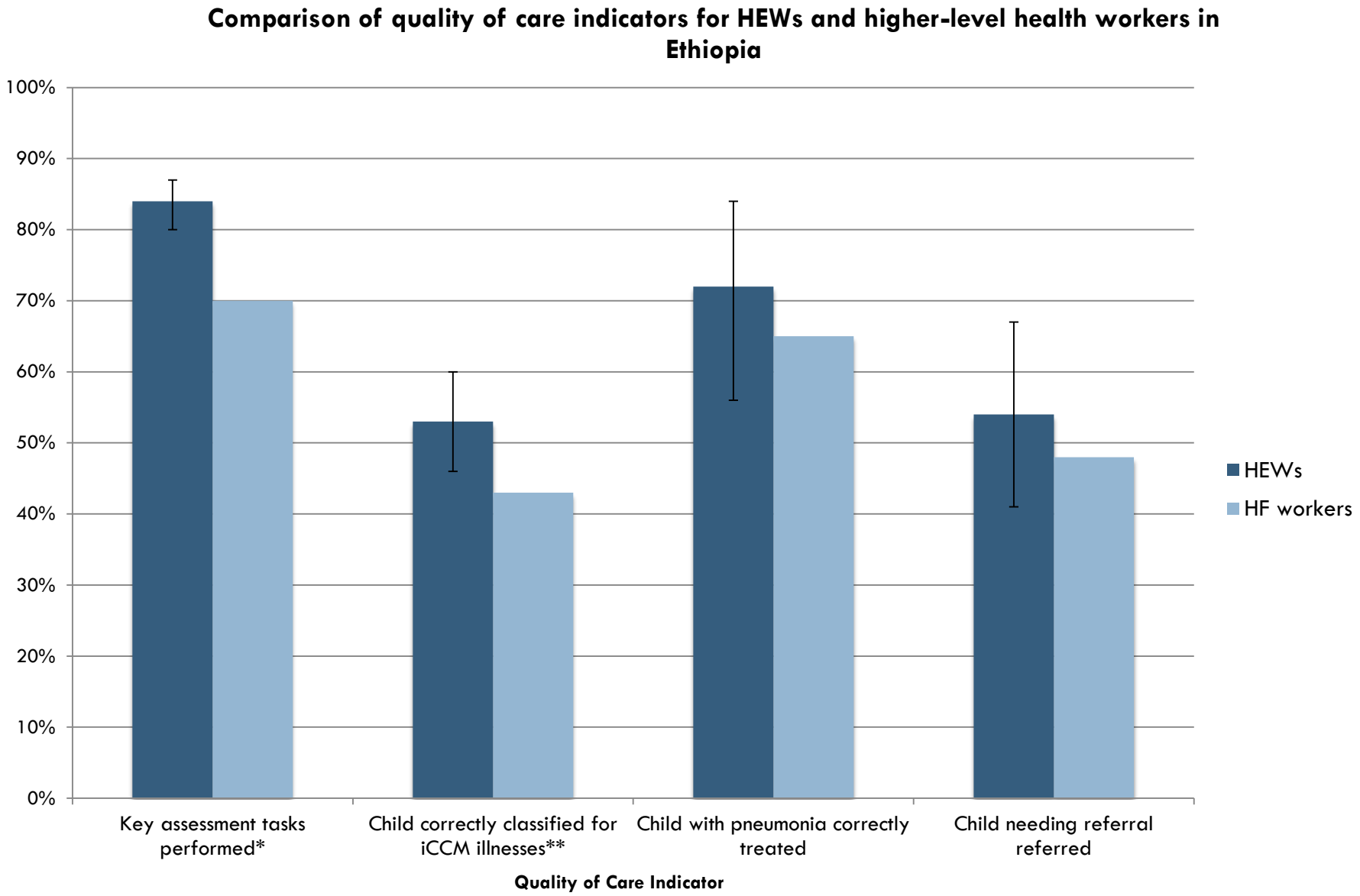


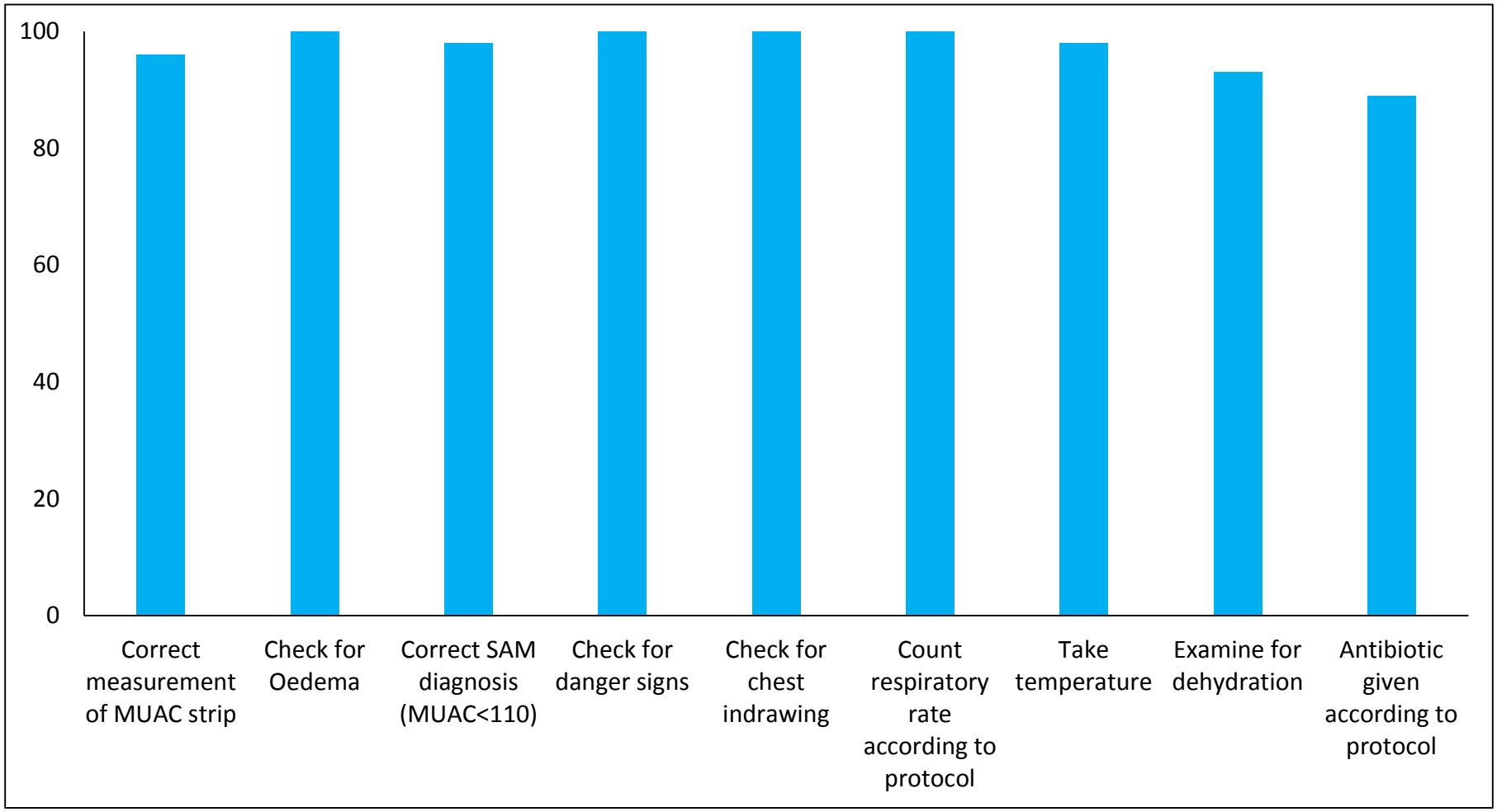
Figure 4: **Meta-analysis of the effect of home visits on neonatal mortality rate**

Kirkwood et al. Lancet 2013

QoC: CHWs perform as well as, or better, than Health Facility workers

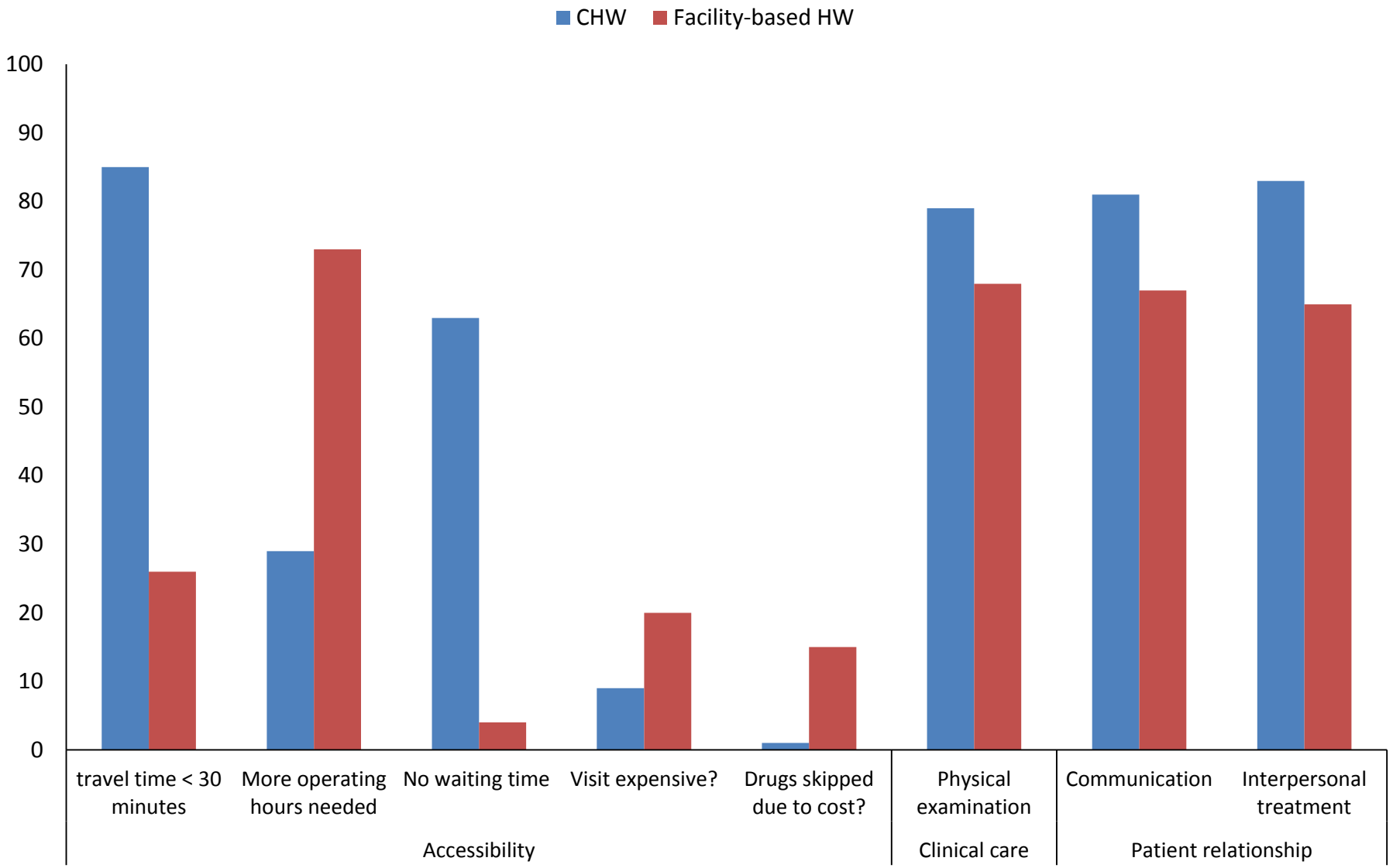


Quality of care: treatment of severe acute malnutrition by CHWs in Bangladesh



Puett et al. Maternal and child nutrition 2013.

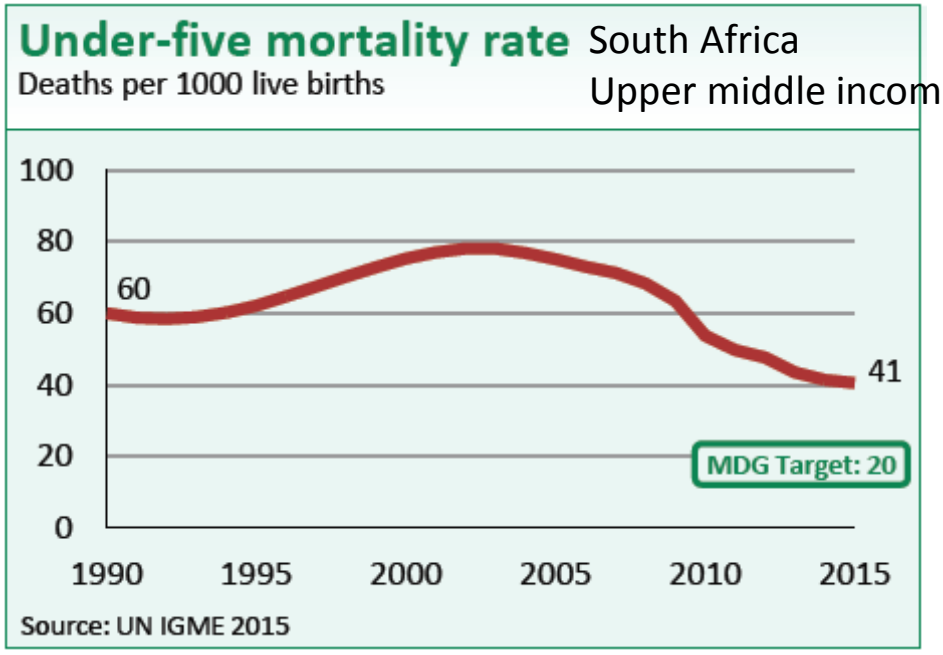
Perceived quality of care for pneumonia (<5) by CHWs in Western Kenya

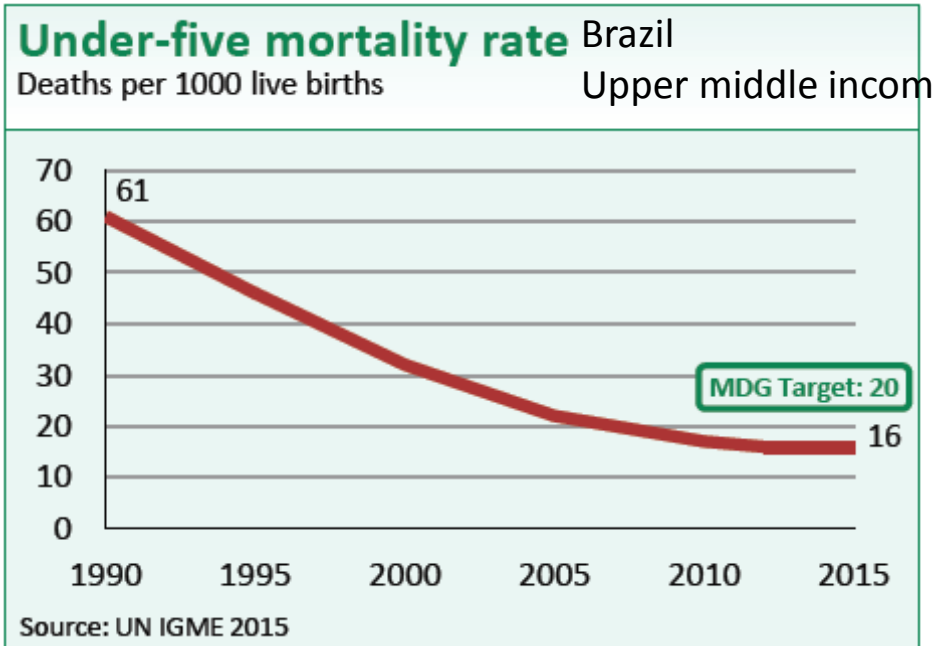


Shaw et al. Am J Trop Med Hygiene 2016

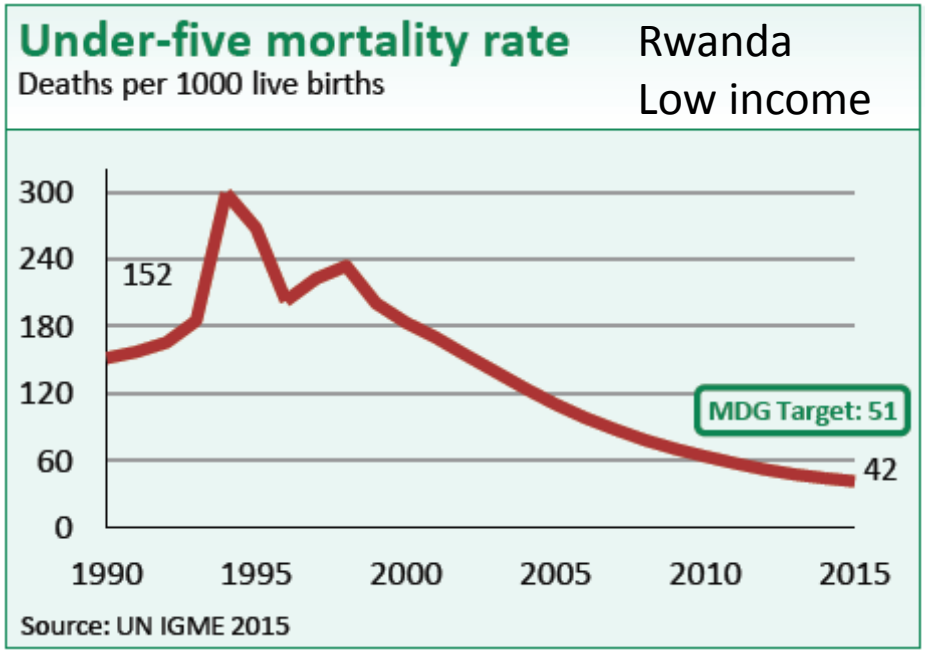
High burden countries that attained MDG4

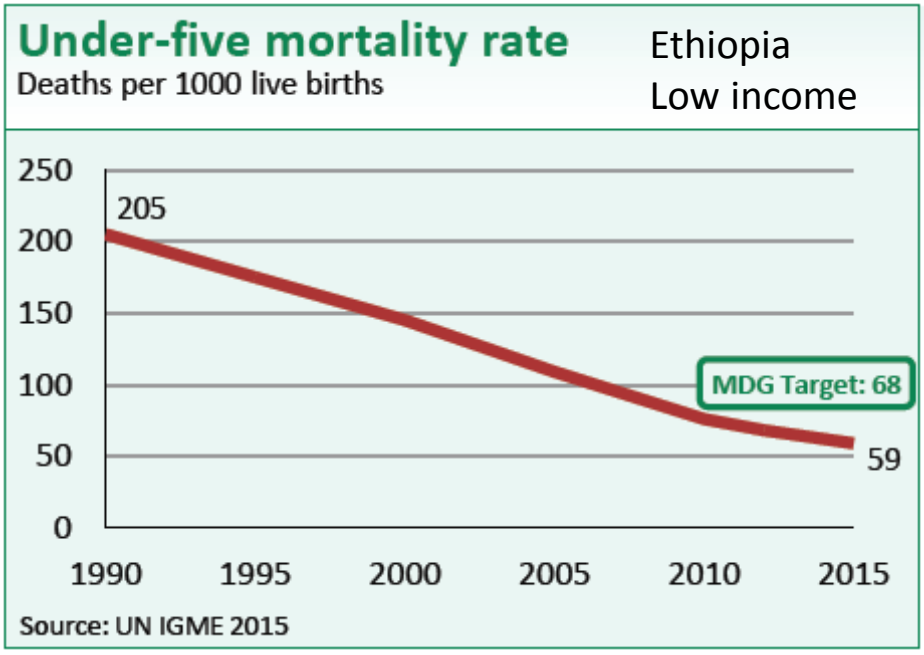
- Bangladesh
- Cambodia
- Nepal
- Eritrea
- **Ethiopia**
- Malawi
- Niger
- **Rwanda**
- Tanzania



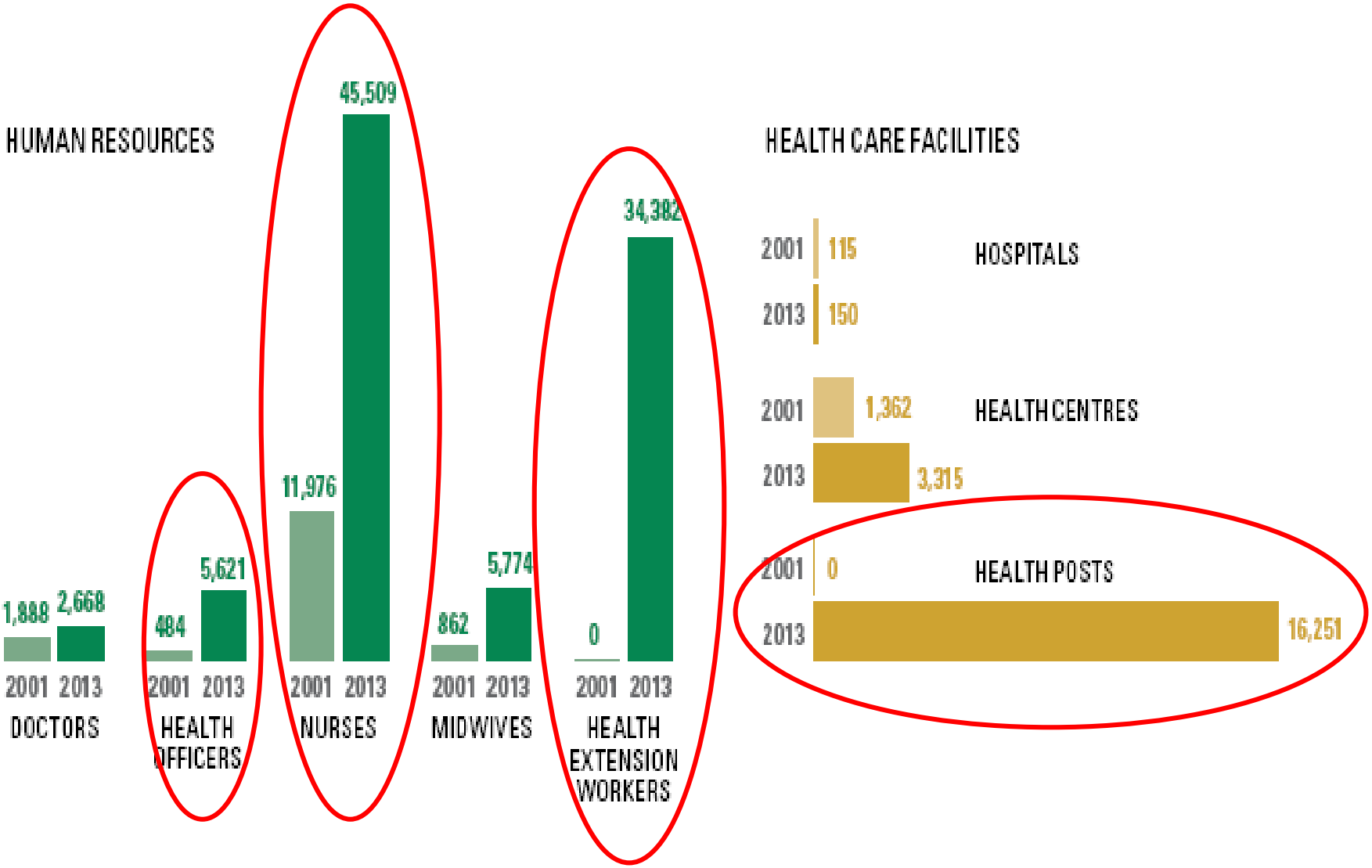


All three have community treatment of pneumonia policy

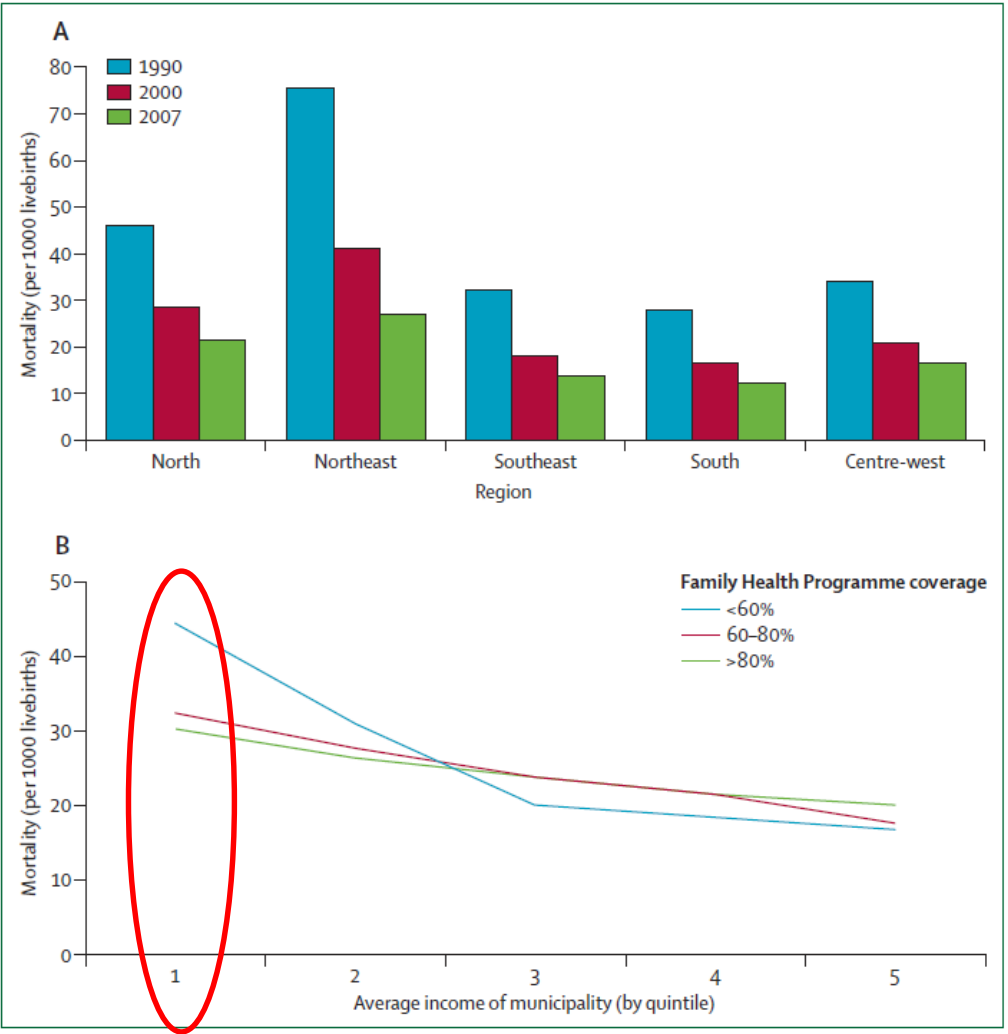


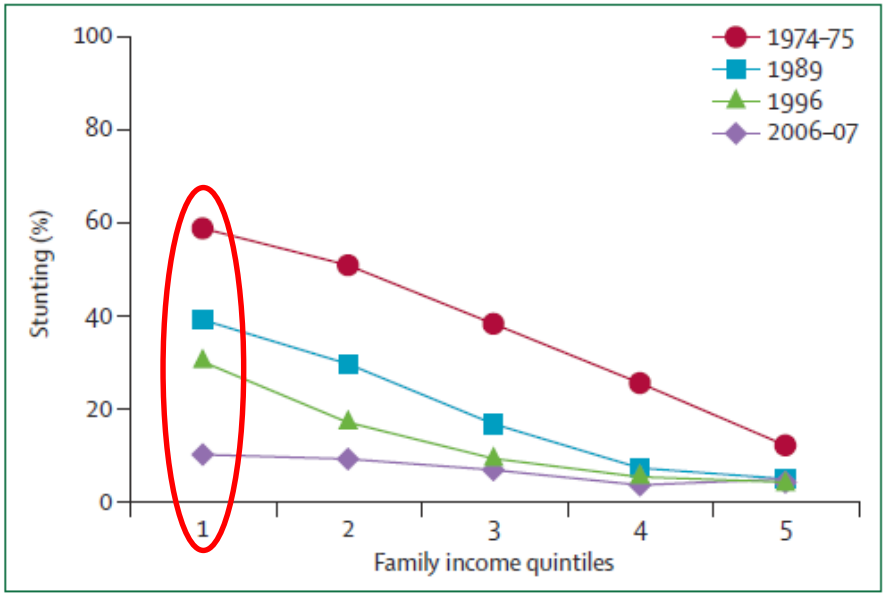


Ethiopia


HUMAN RESOURCES
1,888
2,668
2001 2013
DOCTORS
484
5,621
2001 2013
HEALTH OFFICERS
11,976
45,509
2001 2013
NURSES
862
5,774
2001 2013
MIDWIVES
0
34,382
2001 2013
HEALTH EXTENSION WORKERS
HEALTH CARE FACILITIES
2001 115
2013 150
HOSPITALS
2001 1,362
2013 3,315
HEALTH CENTRES
2001 0
2013 16,251
HEALTH POSTS

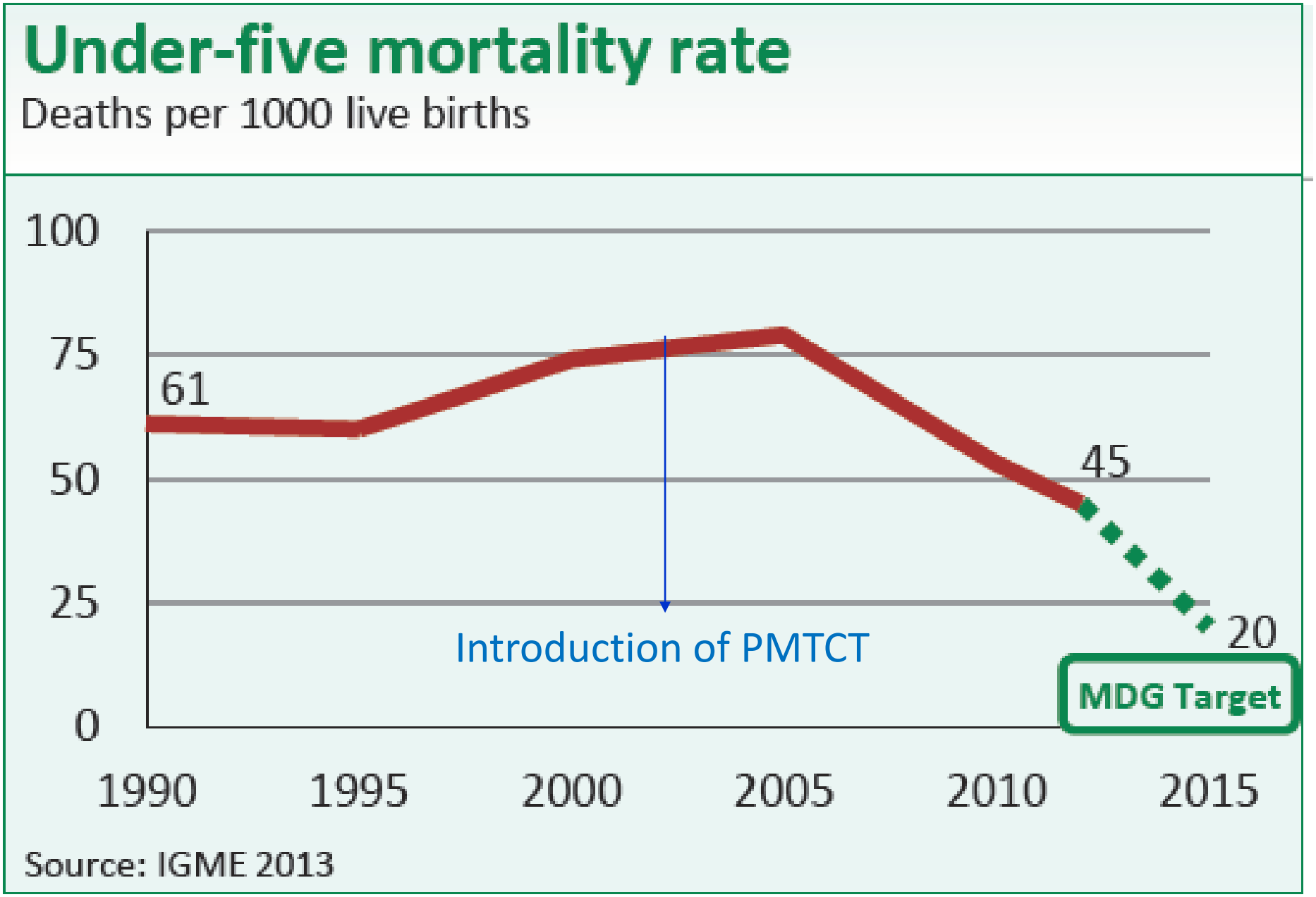
Brazil- reducing regional and socio-economic inequalities through the Family Health Programme





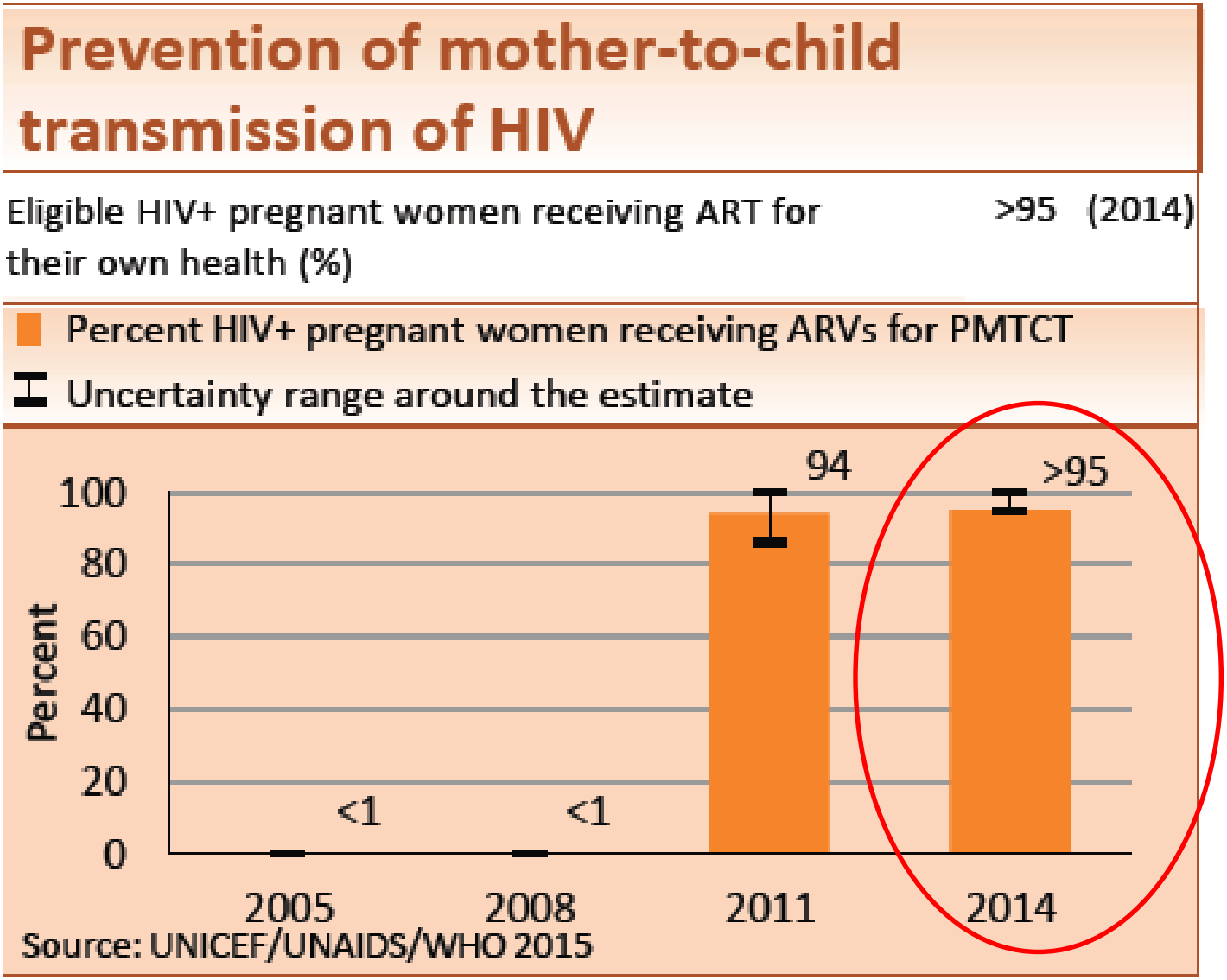
WHERE CAN CHWS MAKE A DIFFERENCE IN SOUTH AFRICA?

A successful failure?



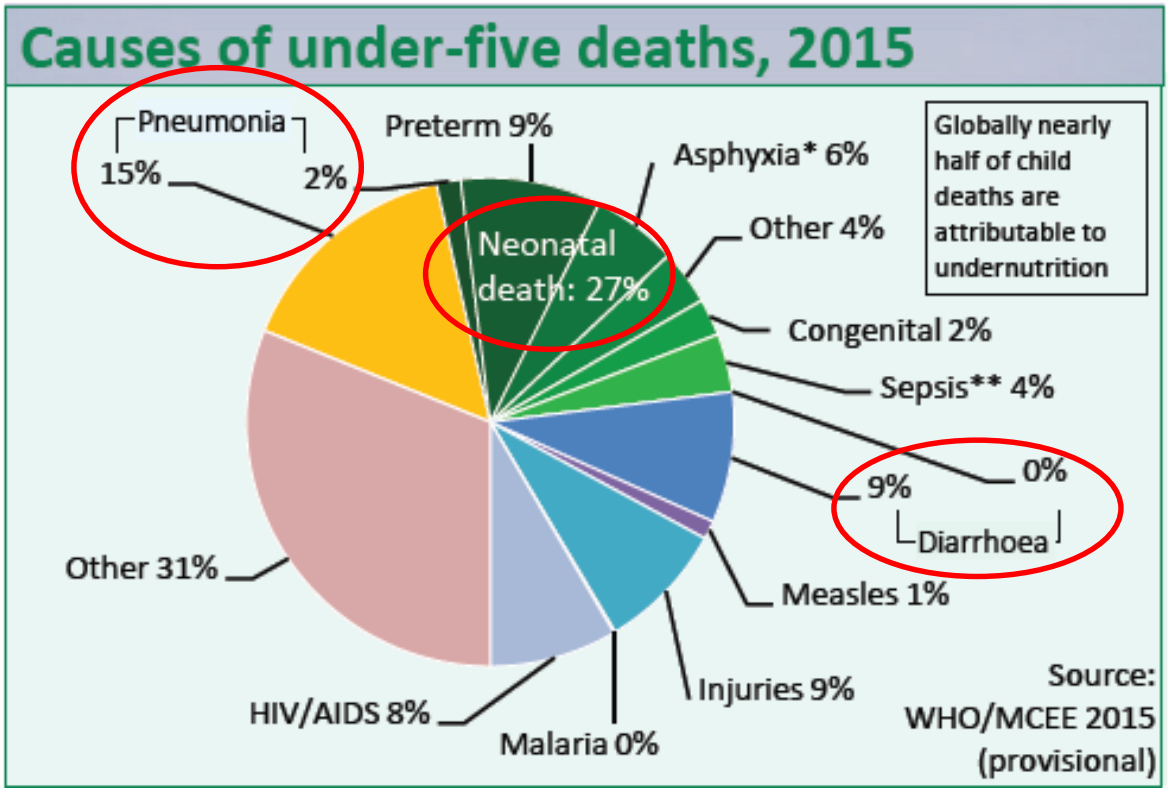
Modelled estimate, no DHS since 2003 (58)

A success story…



Implications of a singular focus on ‘elimination’ of HIV

- non-AIDS deaths contribute an increasing proportion <5 deaths



LRTI major contributor to out of hospital deaths

Table 3. Underlying causes of death in the under-5 age group

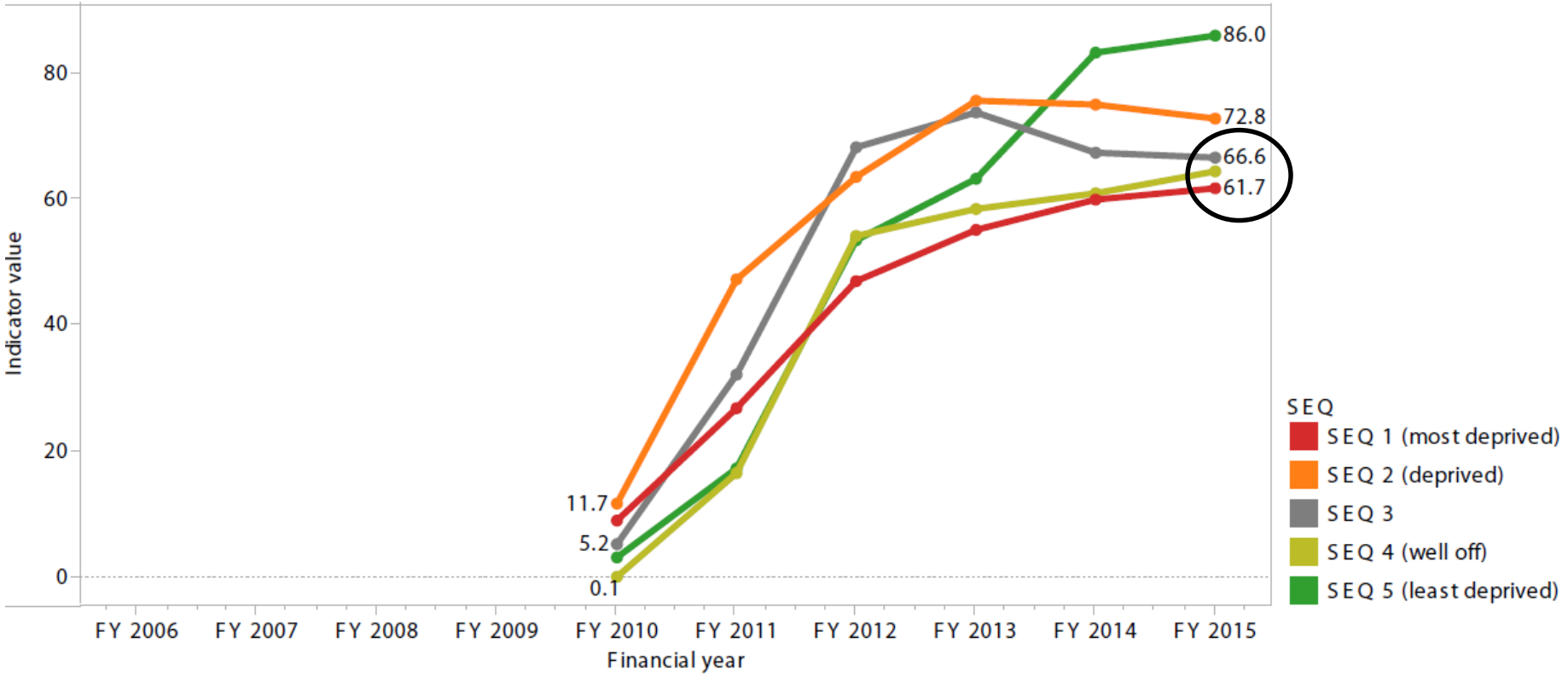
Cause of death	0 - 28 days (*n*=113), %	1 - 11 months (*n*=263), %	1 - 4 years (*n*=104), %	Total <5 years (*N*=480), %
Related natural causes				
Congenital	3.5	3.0	1.0	2.7
Diarrhoea	0.0	12.9	7.7	8.8
Lower RTI	27.4	58.2	16.4	41.9
Stillborn	34.5	0.0	0.0	8.1
Other natural	8.9	5.3	7.7	6.7
Related external causes				
Child abuse and neglect	19.5	10.3	14.4	13.3
RTA	0.0	0.4	21.2	4.8
Other external*	2.7	5.7	30.7	10.4
Undetermined	3.5	4.2	1.0	3.3

*Includes drownings, fire deaths, procedure related, accidental injury and poisoning.

Mathews et al. SAMJ 2016

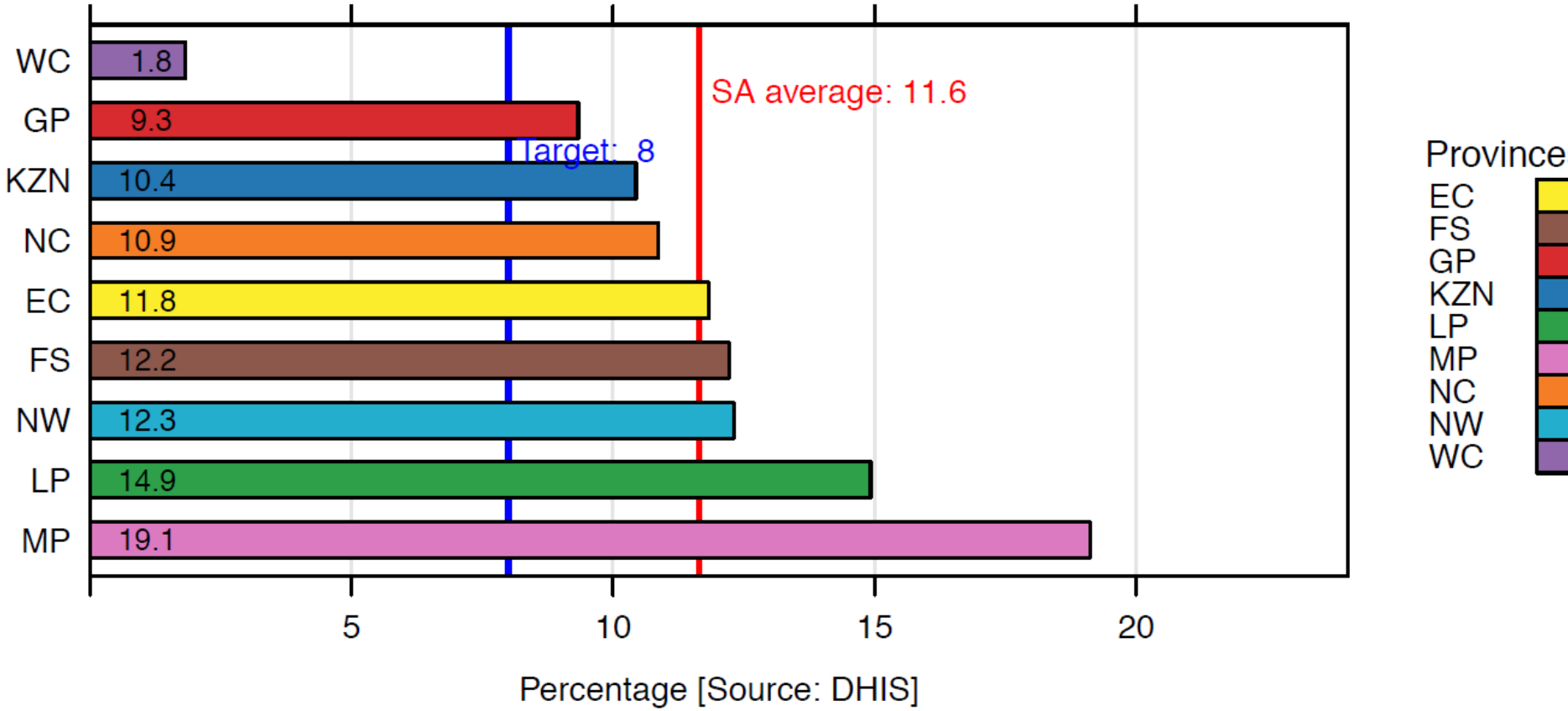
Trends in average district values by SEQ for mother postnatal visit within 6 days rate

Profound inequities in access to care still exist



Source: District Health Barometer: 2014/15

Figure 26: Child under 5 years severe acute malnutrition case fatality rate by province, 2014/15



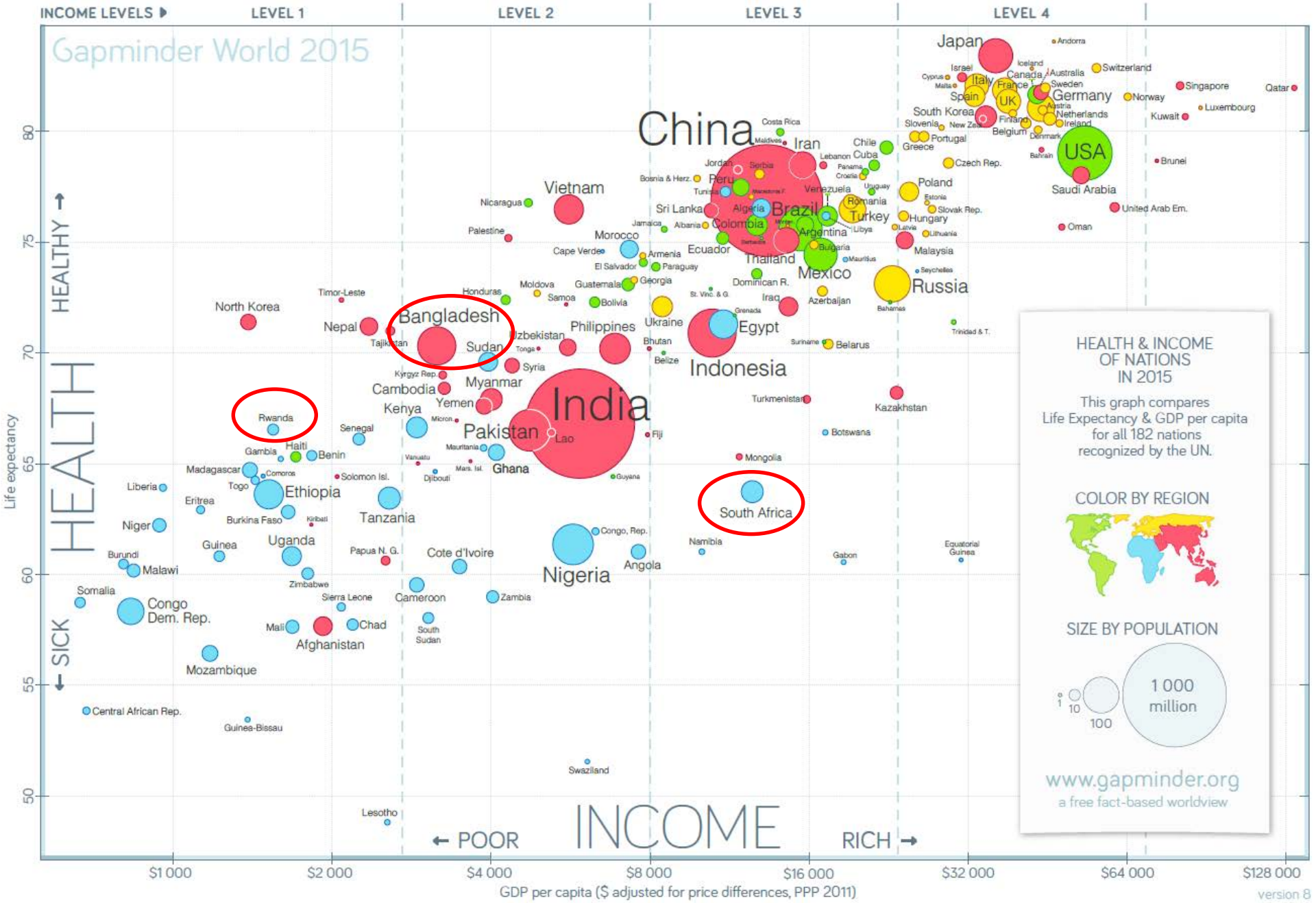
Delays in care seeking

Difficulty accessing health facilities

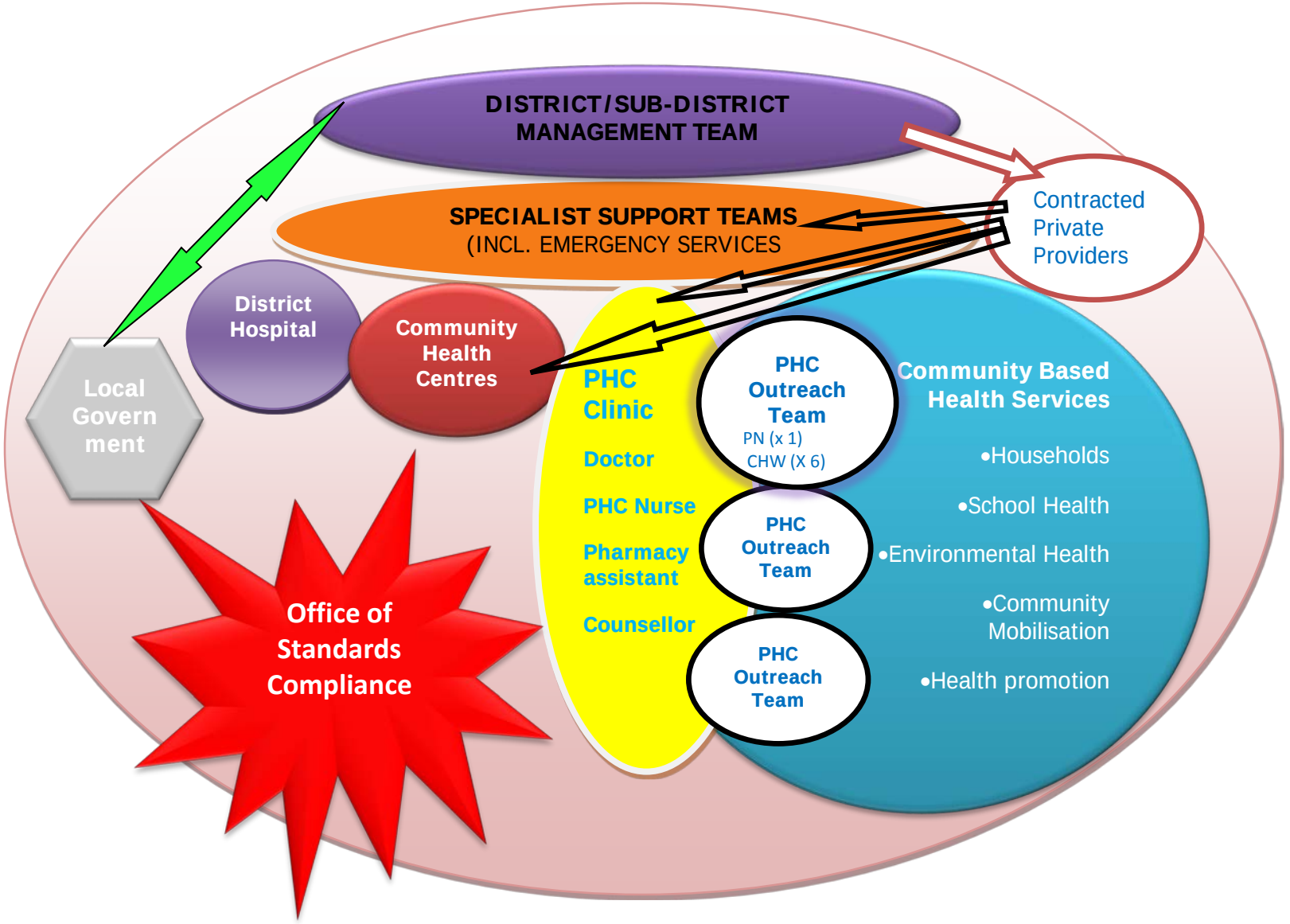
Poor identification and management of children at PHC facilities

Poor quality of care in rural and disadvantaged hospitals

We need to do things differently!



Outreach team model



CHW roles in South Africa currently

- Focusses on assessment and referral
- Wide variation in remuneration, conditions of service and contracting and scope of practice across the country
- Team leaders appointed from clinics exacerbating acute HR shortages at PHC facilities

Density of community health workers is critical for impact

Global examples of CHW ratios

Brazil:

- 235,000 CHWs
- Population of 200 million
- **1 CHW per 150 families/ 800 people**

Rwanda:

- 45 000 CHWs
- 11,6 million population
- 1 CHW per 260 people
- **1/5th population of South Africa with a similar number of CHWs**

Conclusion

- The current WBOT strategy and CHW programme will not address profound inequities in child health outcomes without extending CHW scope to include some curative functions and improving the ratio of CHWs to households
- To reduce newborn and child mortality will require both increased numbers and skills of CHWs as well as greatly improved clinic and district hospital quality of care and functioning.

South Africa needs more CHWs who are allowed to do more

Acknowledgements

- Prof David Sanders