

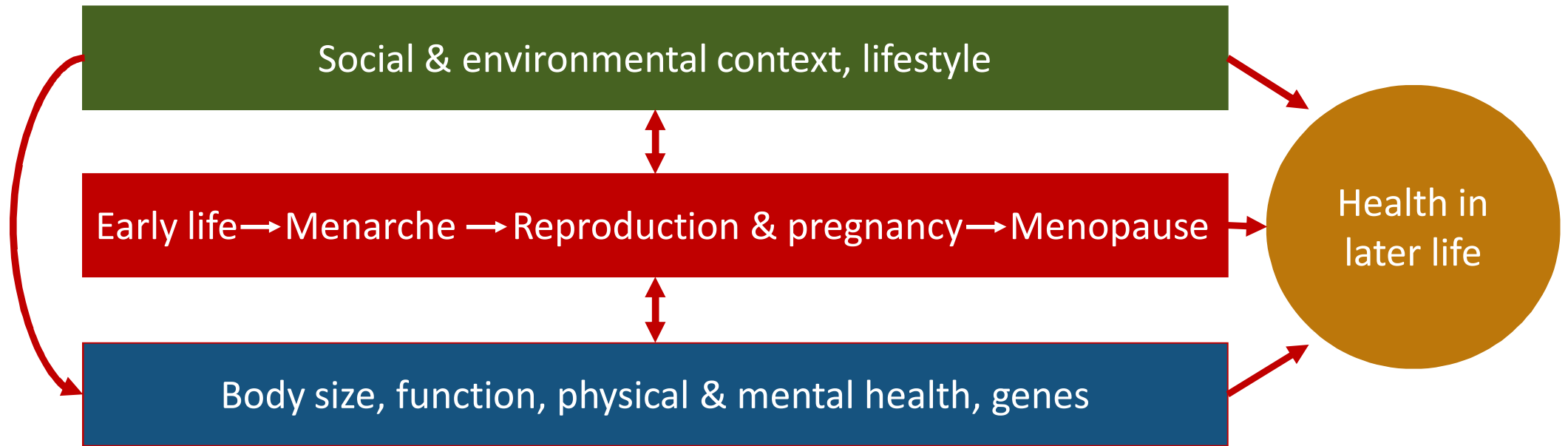
Maternal morbidity: A life course perspective

Non-communicable diseases and related conditions in pregnancy

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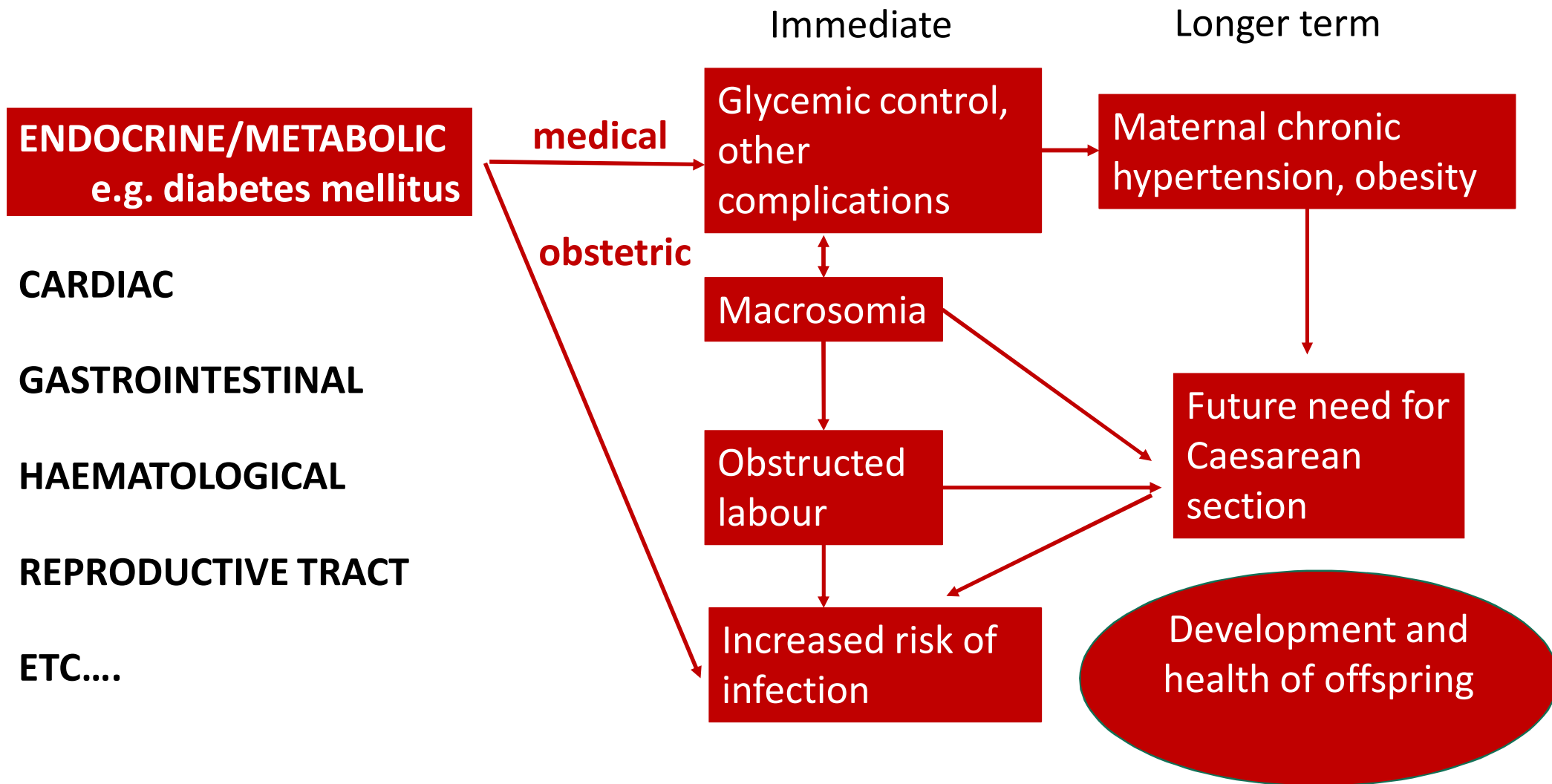
impact
for safer childbirth

A life course approach



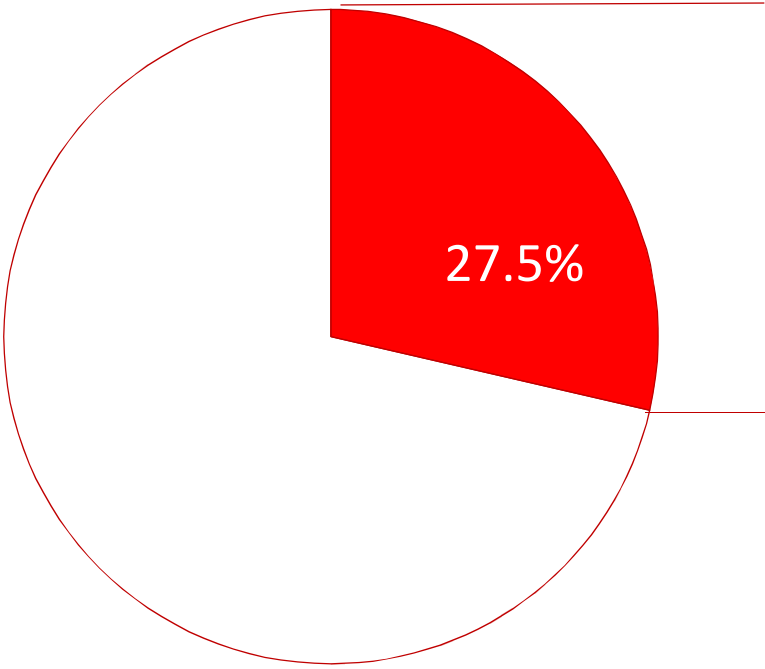
Adapted from Mishra et al Maturitas 2010, RCOG 2011, Scientific Impact paper no. 27

Non-communicable diseases and pregnancy outcome



The burden of non-communicable diseases in pregnancy

Global causes of maternal mortality

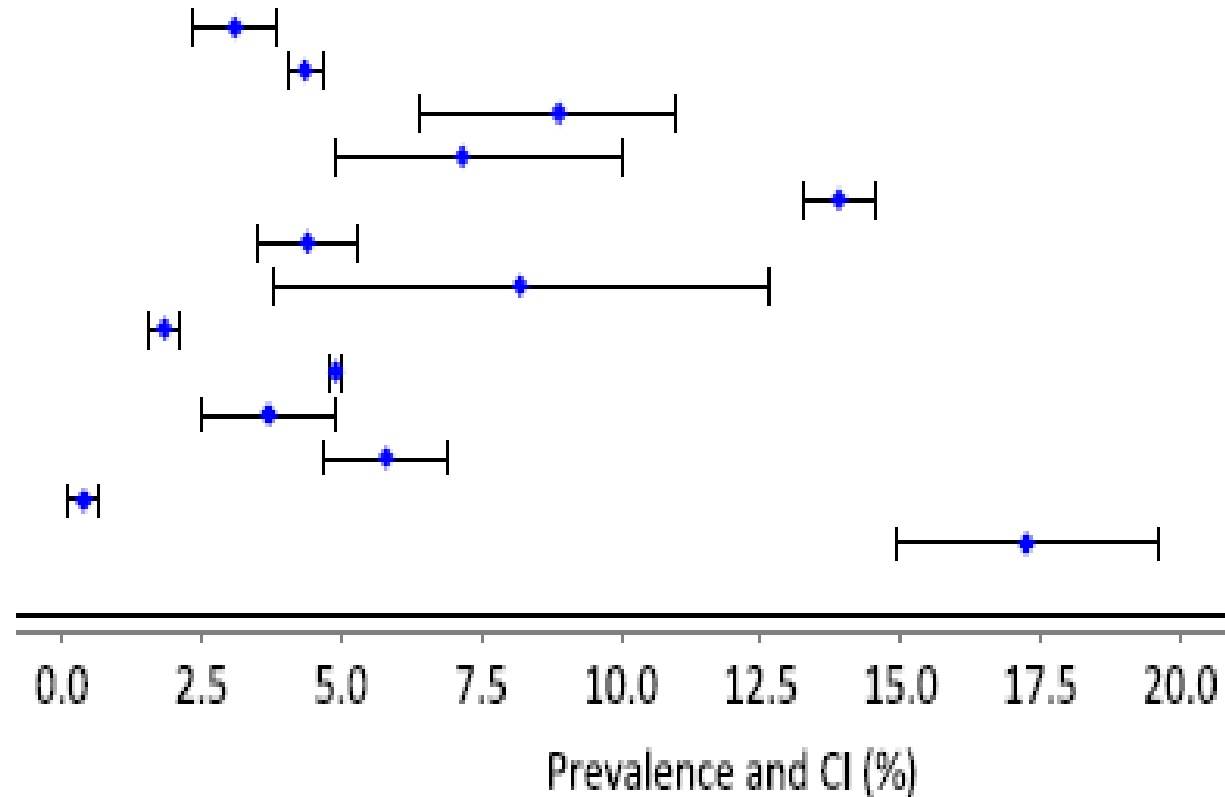


■ Indirect □ Direct

Cause, indirects	%
HIV	5.5
Pre-existing medical conditions	14.8
Other indirect	7.2

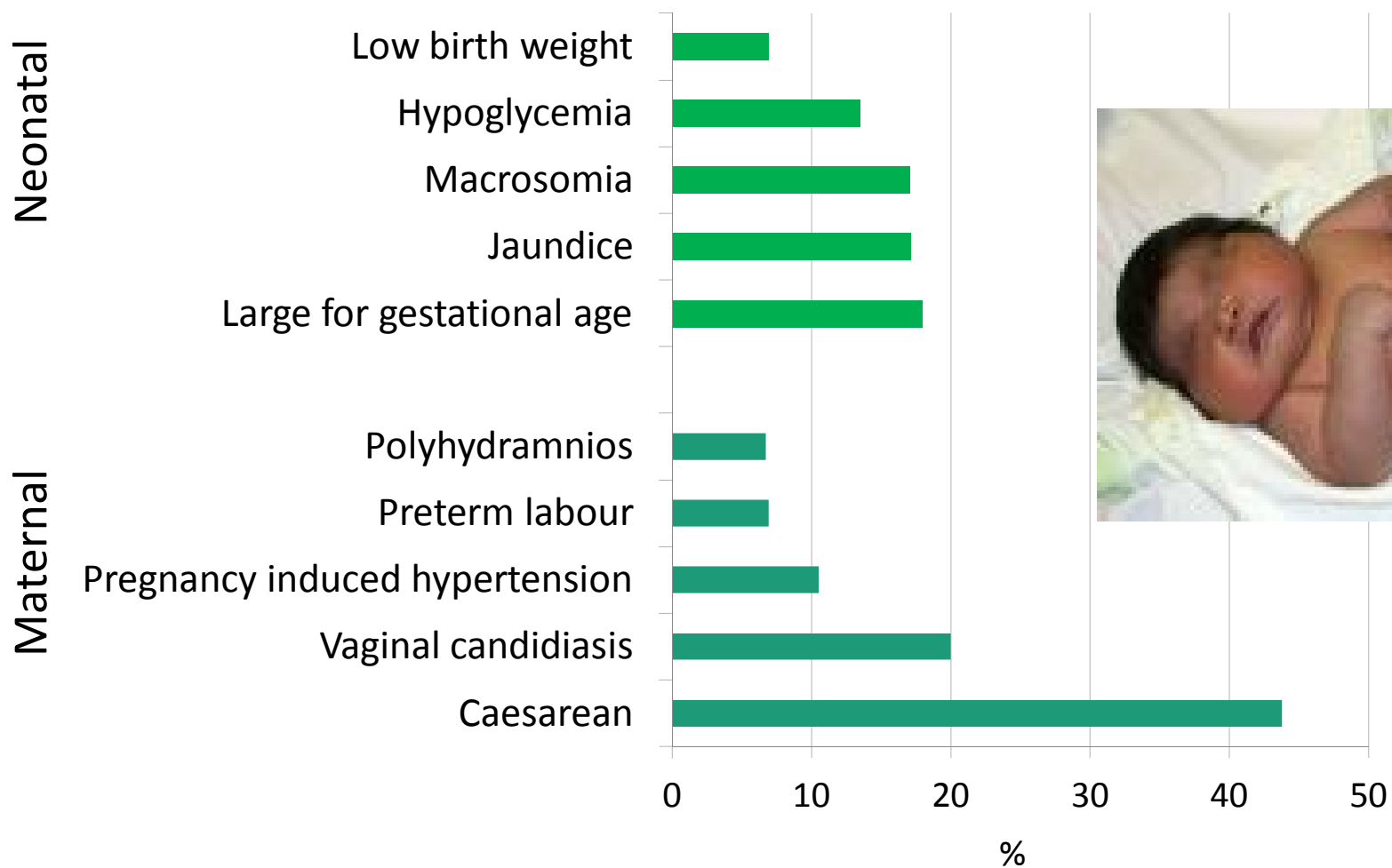
Gestational diabetes mellitus (GDM) in pregnant women, population based studies in LMIC

Zargar et al, 2004
 Yang H et al, 2009
 Dahanayaka et al, 2012
 Dahanayaka et al, 2012
 Seshiah et al, 2008 & 2009
 Zargar et al, 2004
 Sayeed et al, 2005
 Yang X et al, 2002
 Zhang et al, 2011
 Seyoum et al, 1999
 McCarthy et al, 2010
 Schmidt et al, 2000
 Davilla et al, 2011



Adverse outcomes, pregnant women with GDM, LMIC

Median (of interquartile range) incidence reported

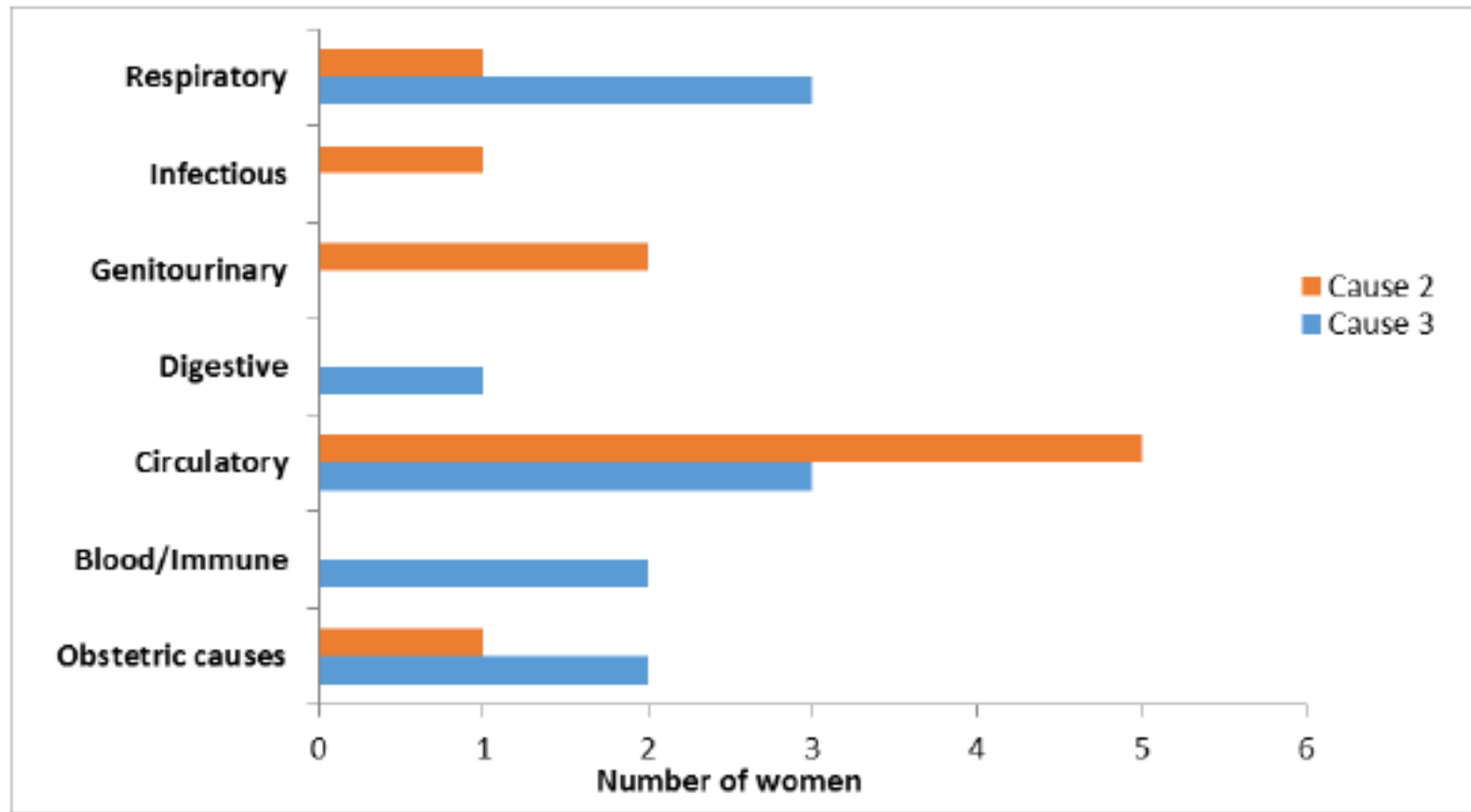


Adverse outcomes, GDM

LMIC compared to industrialised countries

Outcomes, %	LMIC Median, (interquartile range)	USA	UK	Australia	Sweden	Italy
Caesarean section	43.8 (34.9-65.9)	30.0	28.0	30.2	21.7	34.9
Stillbirth	2.6 (0.6-6.3)	0.5	-	0.3	0.4	0.34

Co-morbidities in diabetic women who died, Jamaica



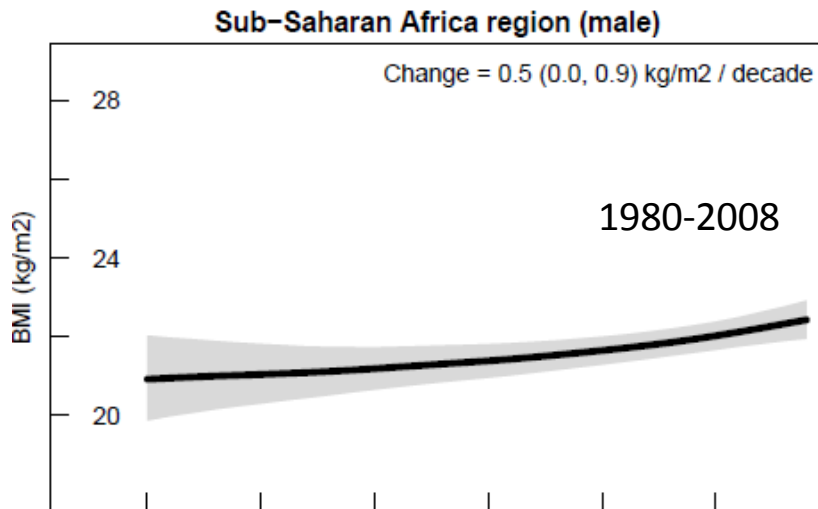
Pregnancy outcomes as ‘primordial prevention’?

Adverse pregnancy outcome and risk of future cardiovascular mortality

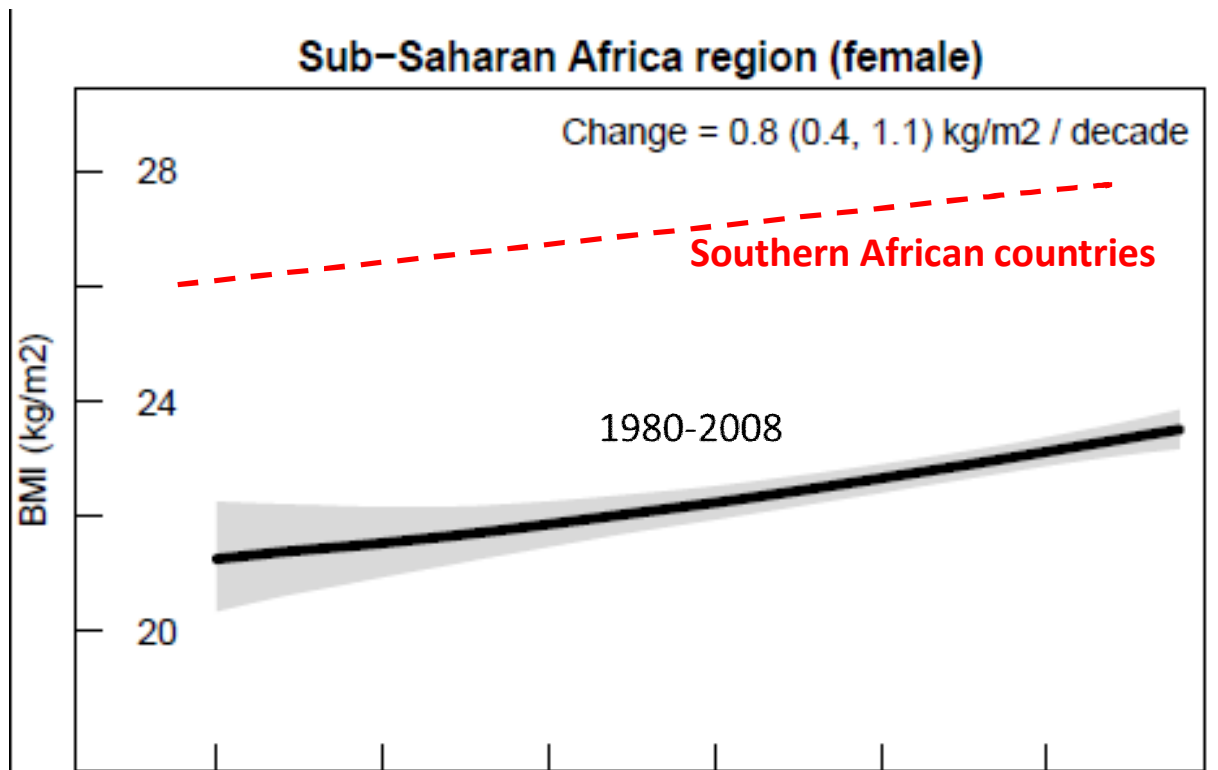
Adverse pregnancy outcome	Relative risk (range)
Low birth weight	1.23–1.49
Fetal growth*	1.44–2.56
Preterm birth	2.06–2.45

*offspring birth weight inversely associated with cardiovascular and all-cause mortality

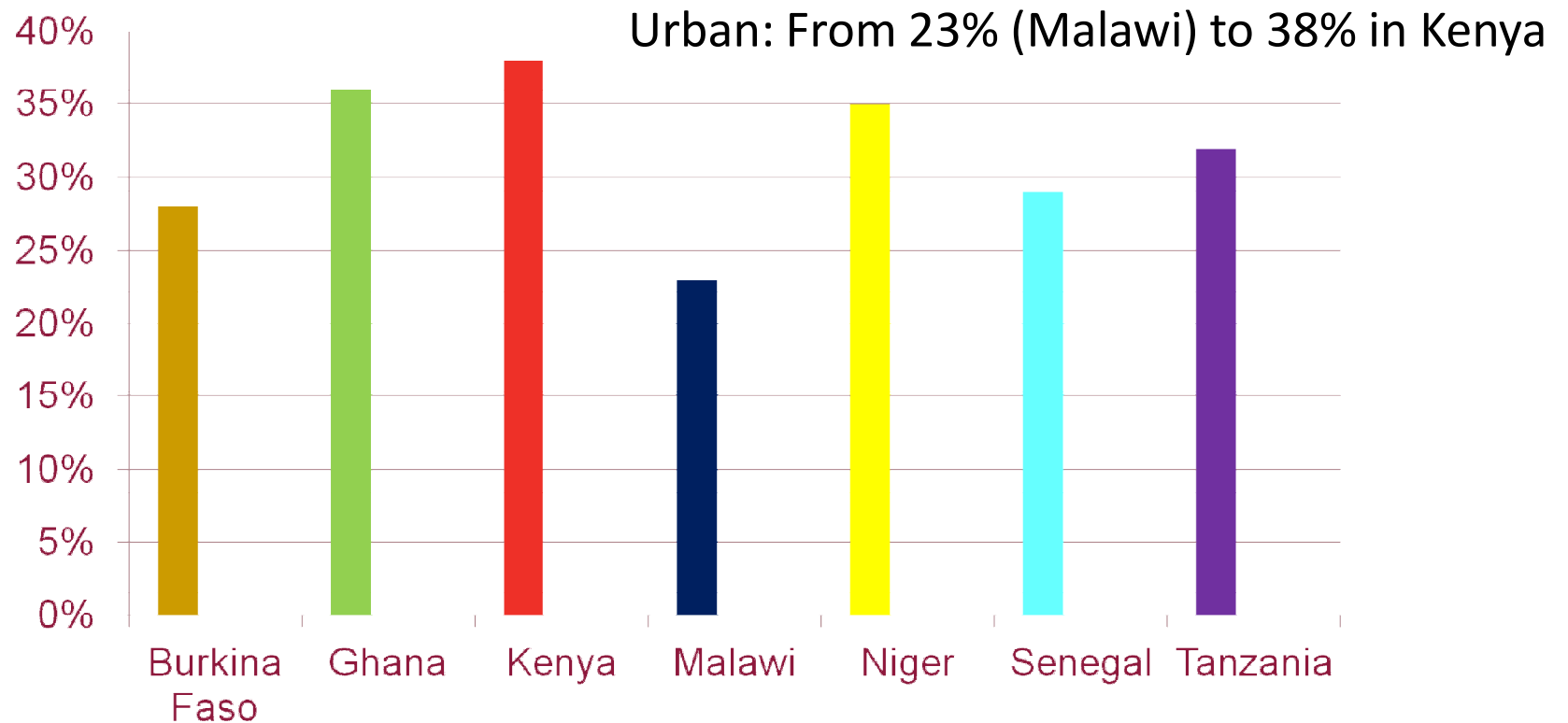
Body mass index (BMI) trends 1980-2008



- “ Rate of change in women similar across all regions of SSA
- “ Highest baselines in Southern Africa at 26 kg/m²

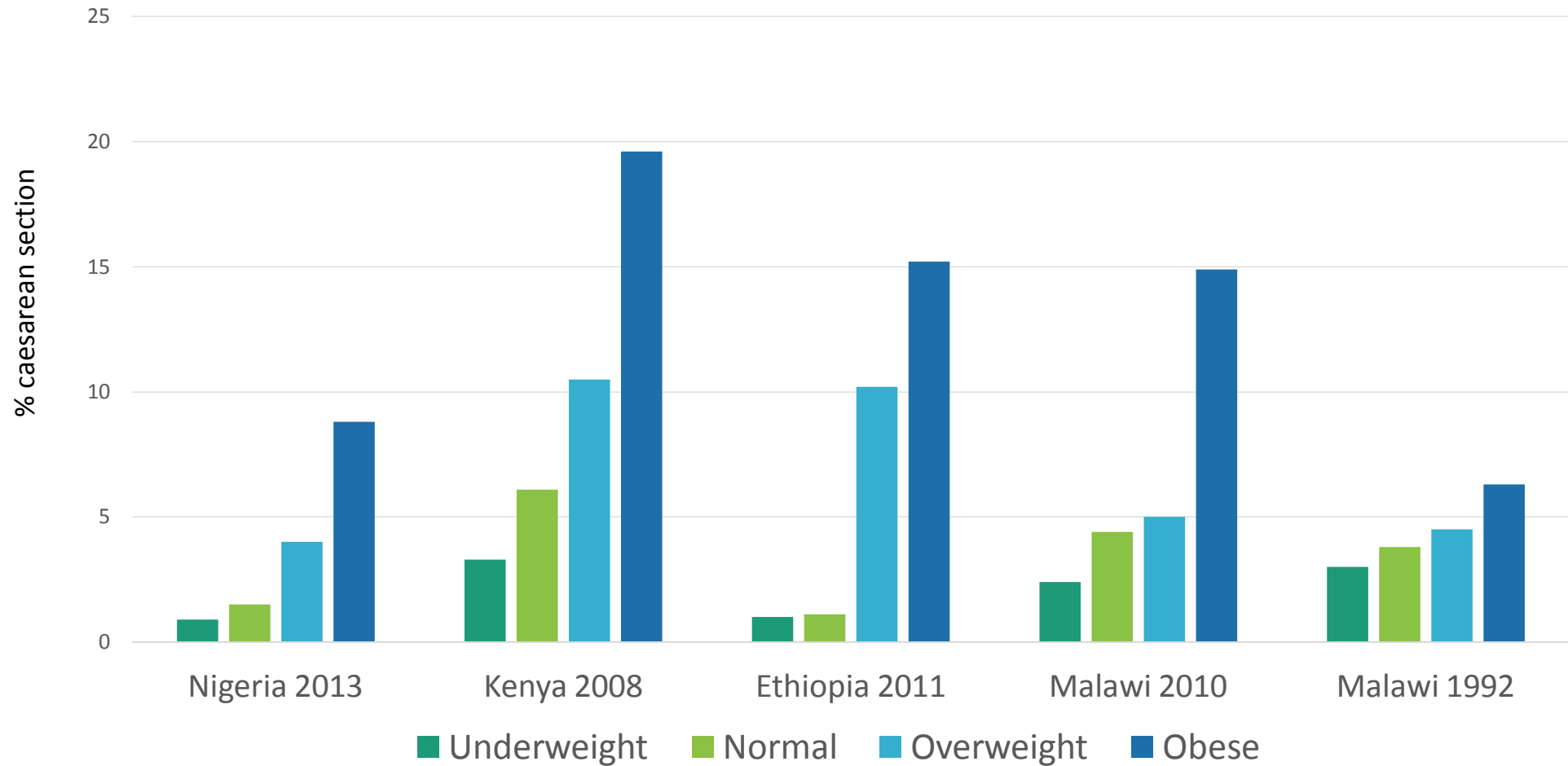


Obesity in urban women in seven sub-Saharan African countries



Rural: From 4% (Burkina Faso) to 18% in Kenya

Are women of different weight categories receiving 'life saving' care (proxy CS)?



Is the difference observed in CS across BMI categories independent of other exposures?

Nigeria*

	Odds ratio (Confidence intervals)	
	Unadjusted	Adjusted**
BMI (Ref: 18.5-24.9)		
<18.5	0.60 (0.42-0.86)	0.89 (0.62-1.28)
25-29.9	2.78 (2.30-3.36)	1.68 (1.39-2.14)
>=30	5.92 (4.80-7.30)	2.83 (2.26-3.54)

*includes non-pregnant WRA only

**adjusted for year, wealth, education, residence, parity, religion, age

Where are we now?

- “ Falling levels of maternal mortality over the last 25 years
- “ Interventions have focused on maternity services
- “ Less attention has been paid maternal morbidity, including those related to the general health of women
- “ Limited evidence on burden of NCDs in pregnancy in LMIC

The ‘Obstetric transition’: emerging demographic transition in LMIC *(Souza et al 2014)*

- “ Have we missed an opportunity during pregnancy to reduce risks of chronic diseases later in life?
- “ Is the added value of addressing NCDs in pregnancy also going to reduce risks of obstetric complications?
 - “ e.g. sepsis could be reduced by attention to pre-existing conditions like obesity and diabetes

Health systems for NCDs in pregnancy

The burden is great and the money little:

Changing chronic disease management in low- and middle-income countries

Daniel D. Reidpath, Pascale Allotey

School of Medicine and Health Sciences, Monash University, Sunway Campus, Malaysia

“A health system designed to deliver **longitudinal management of a chronic health condition** is distinctly different from one designed for the management of serial acute episodes”

JoGH 2012

*“**Health-system re-engineering** is necessary to begin preparations for the new challenges that lie ahead.....many health systems are inadequate to meet the needs of an increasing number of pregnant women with pre-existing conditions and high-risk pregnancies”.*

Kassebaum et al 2014