



# WASH and maternal & reproductive health

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# Overview

## 1. Maternal health and WASH:

Historical lesson

Conceptual framework shows multiple mechanisms

Epidemiological evidence: systematic review results

## 2. Case studies - Burden of poor WASH:

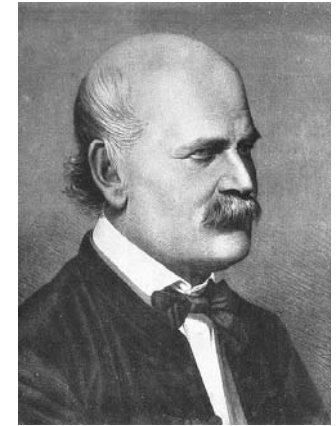
Domestic birth settings

Facility birth settings

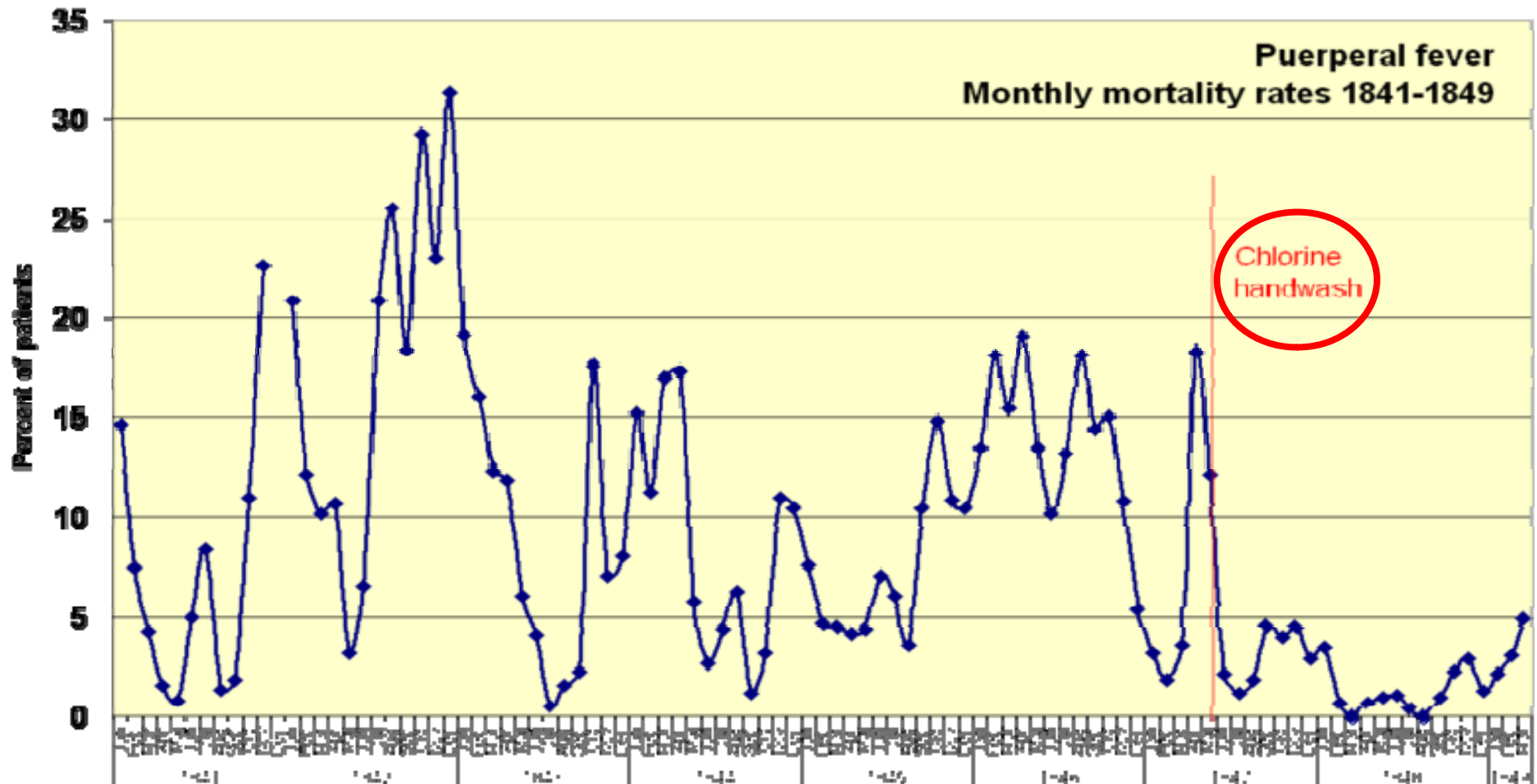
Complex relationship requiring intersectoral action



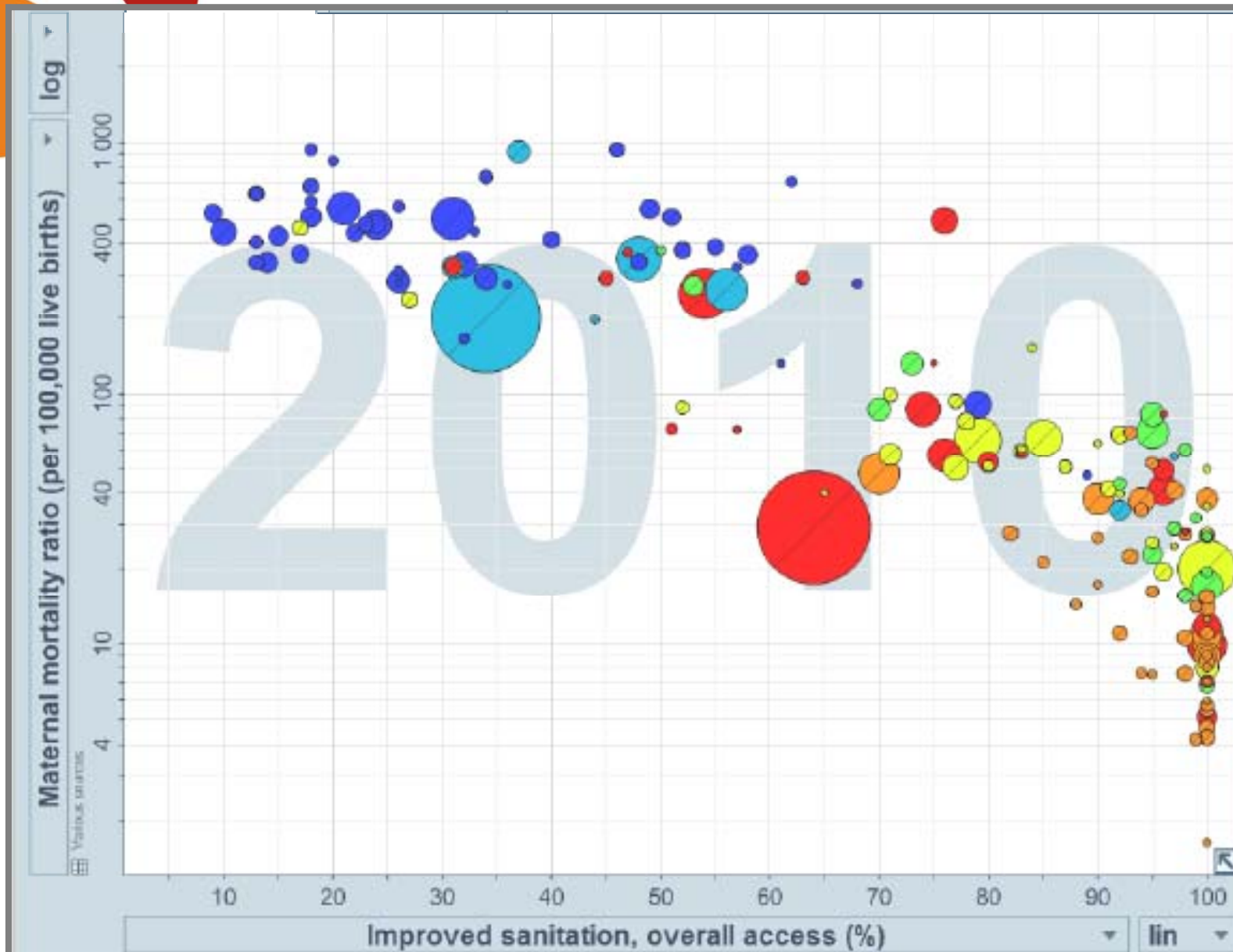
# Vienna, 1847



Poor hygiene in health facilities - Semmelweis

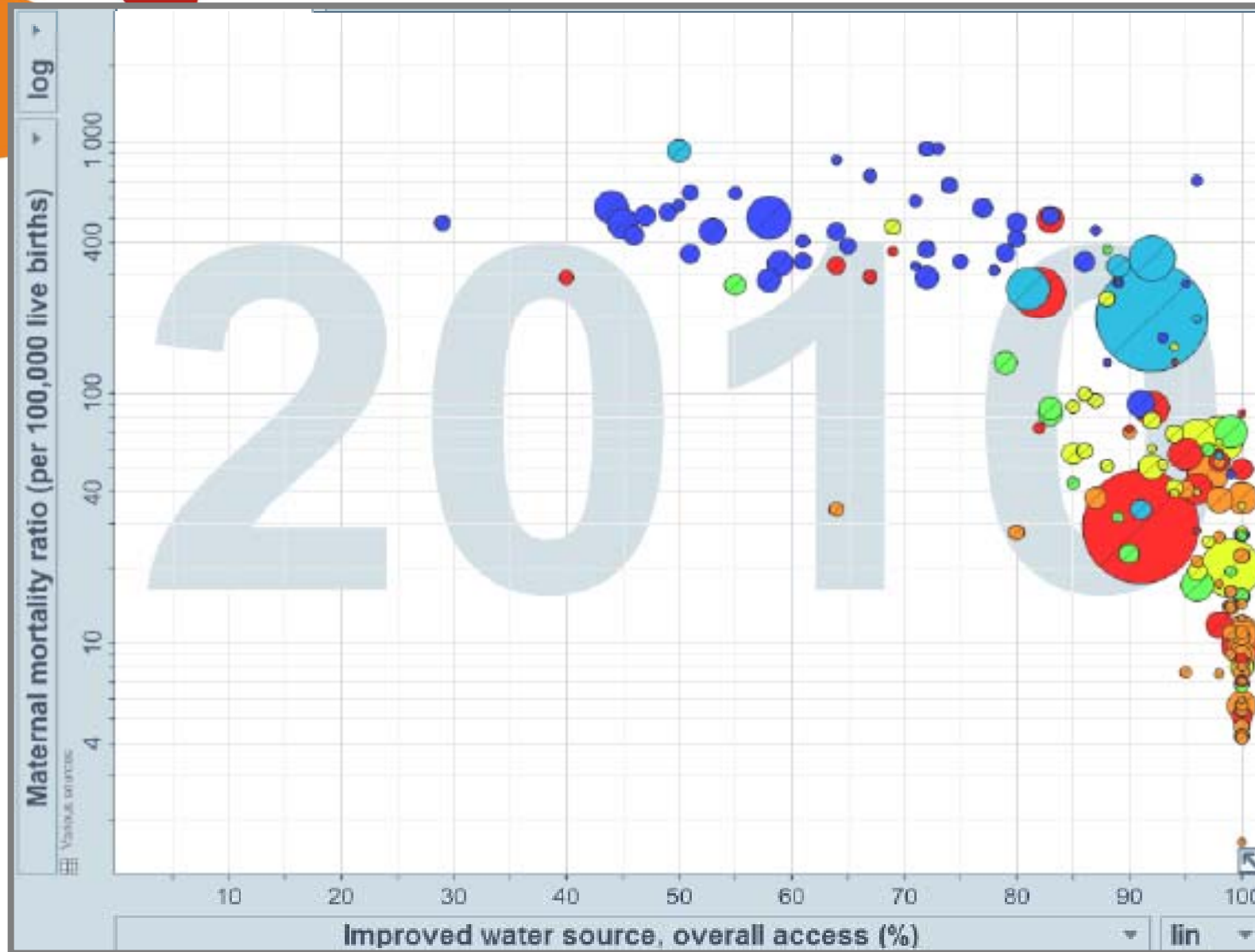


# Today: Global picture (Sanitation)



Source: Gapminder.org

# Today: Global picture (Water)



Source: Gapminder.org



# Millennium Development Goals 1990-2015

## MDG 5A:

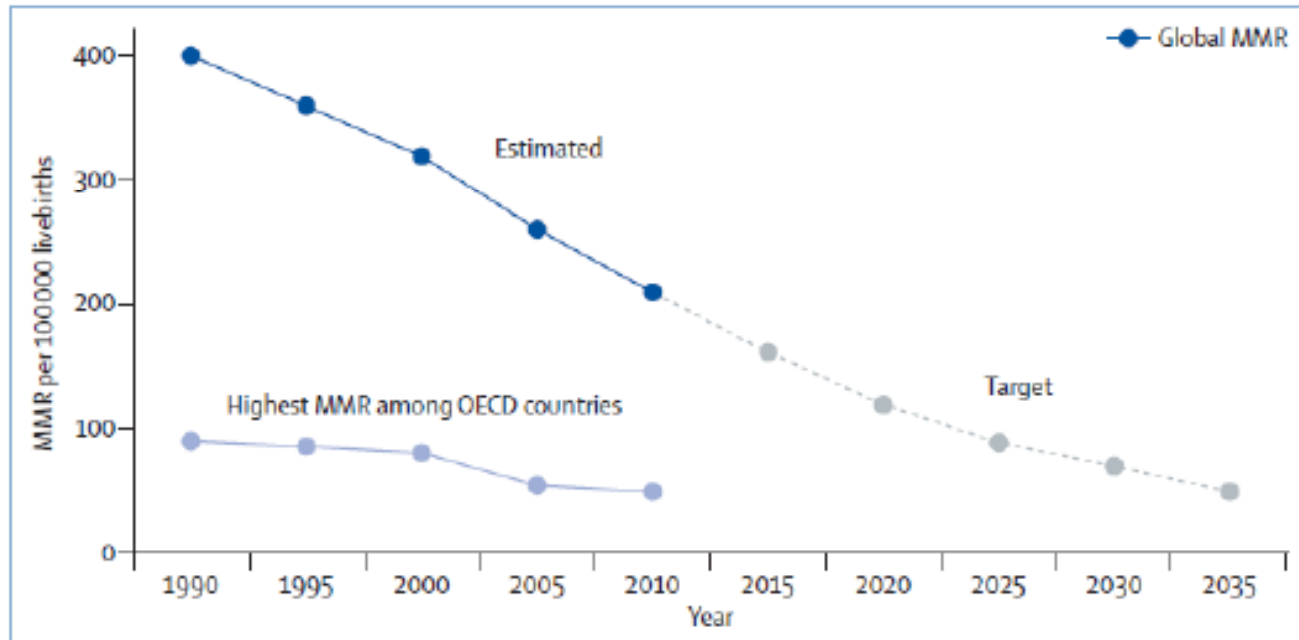
Reduction of maternal mortality ratio by three quarters.

## MDG 7C:

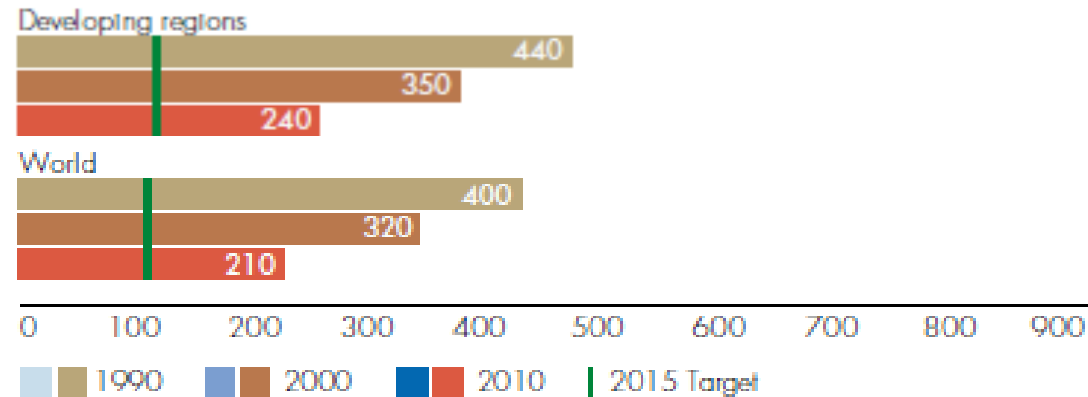
To halve... the proportion of the population without sustainable access to safe drinking water and basic sanitation.



# Insufficient progress on maternal mortality



Bustreo F, Say L, Koblinsky M, Pullum TW, Temmerman M, Pablos-Méndez A. Ending preventable maternal deaths: the time is now. *The Lancet Global Health* 2013;1:e176-e177.



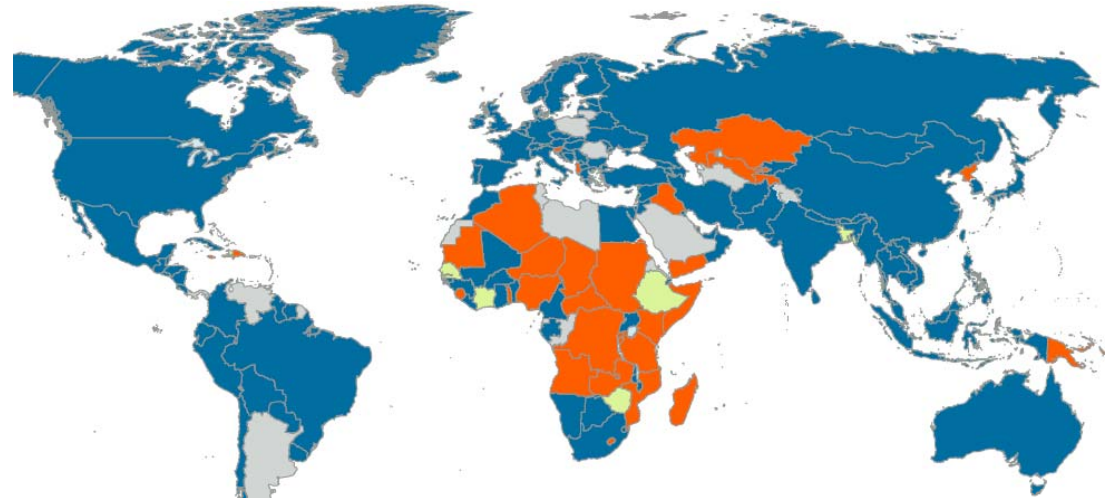
THE MILLENNIUM DEVELOPMENT GOALS REPORT 2013



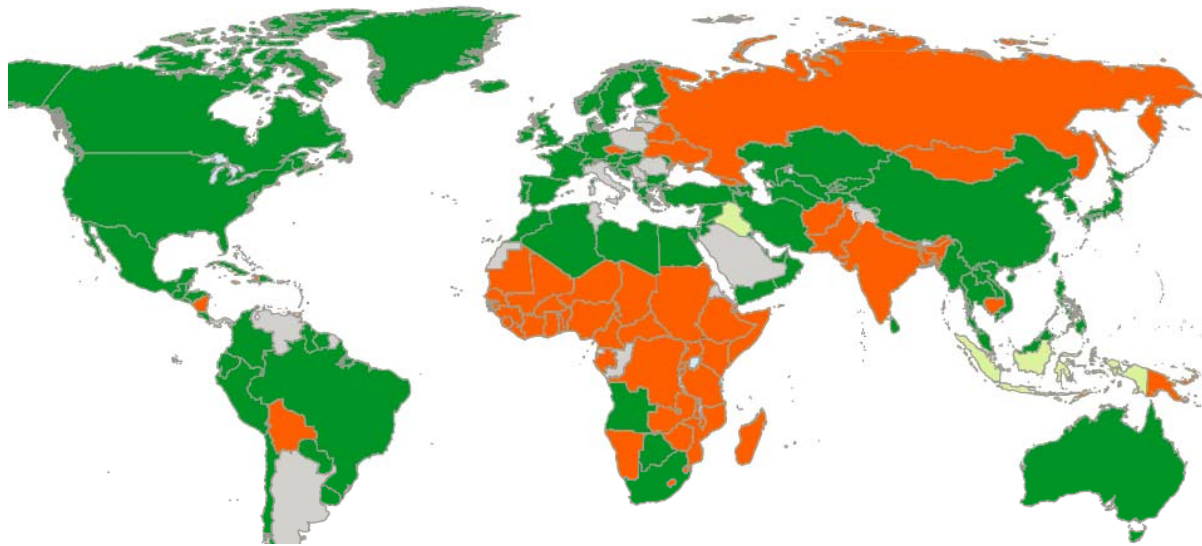


# Progress on domestic access to water & sanitation

780 million without access to safe drinking water



2.5 billion without access to safe sanitation

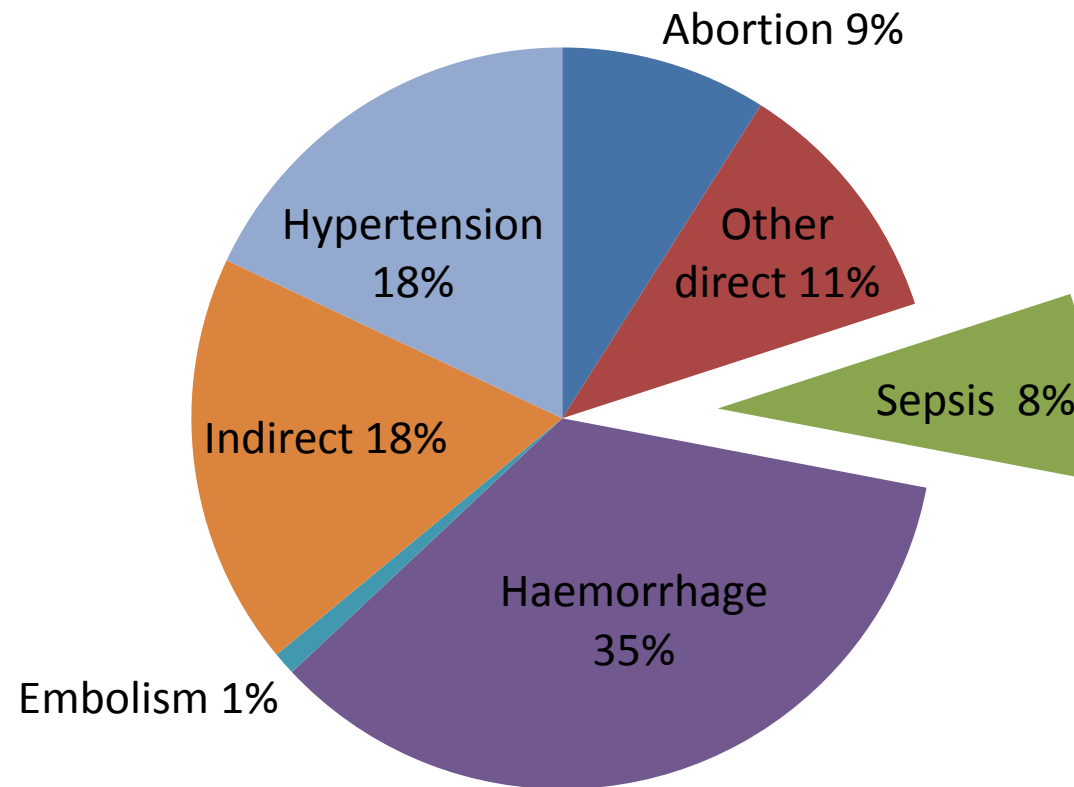






# WASH & Maternal Mortality

Causes of maternal mortality



Significant proportion of maternal deaths caused by sepsis



# Conceptual framework: WASH links with maternal/reproductive health

Three lenses:

1. WASH transmission (biological)
2. Life-course (long-term perspective)
3. Gender (social and behavioural)



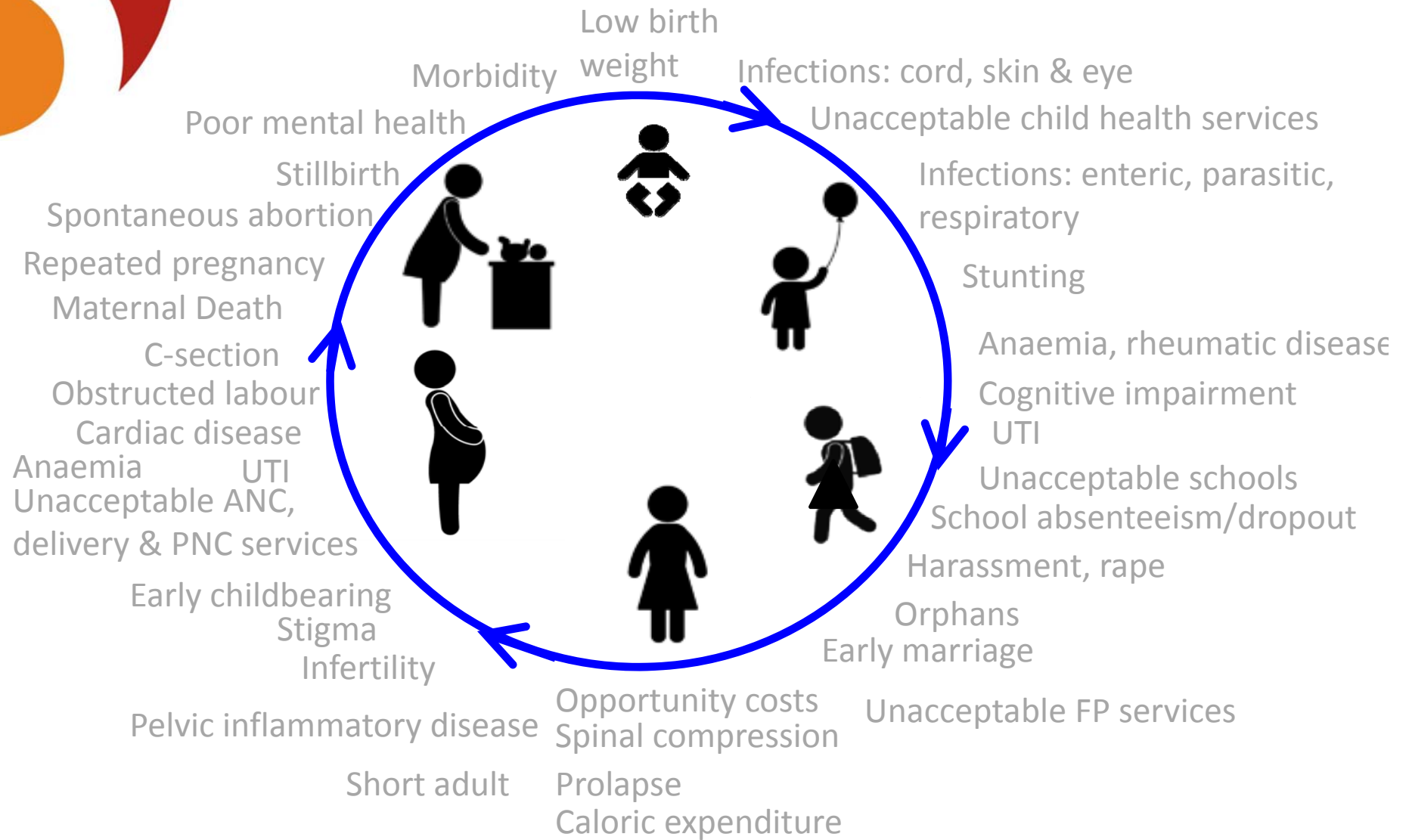
1. In the water



2. Behaviour & location



# Life course perspective on potential impacts





# Systematic literature review

Tropical Medicine and International Health

doi:10.1111/tmi.12275

VOLUME 19 NO 4 PP 368–387 APRIL 2014

## Systematic review and meta-analysis: association between water and sanitation environment and maternal mortality

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Open  
Access

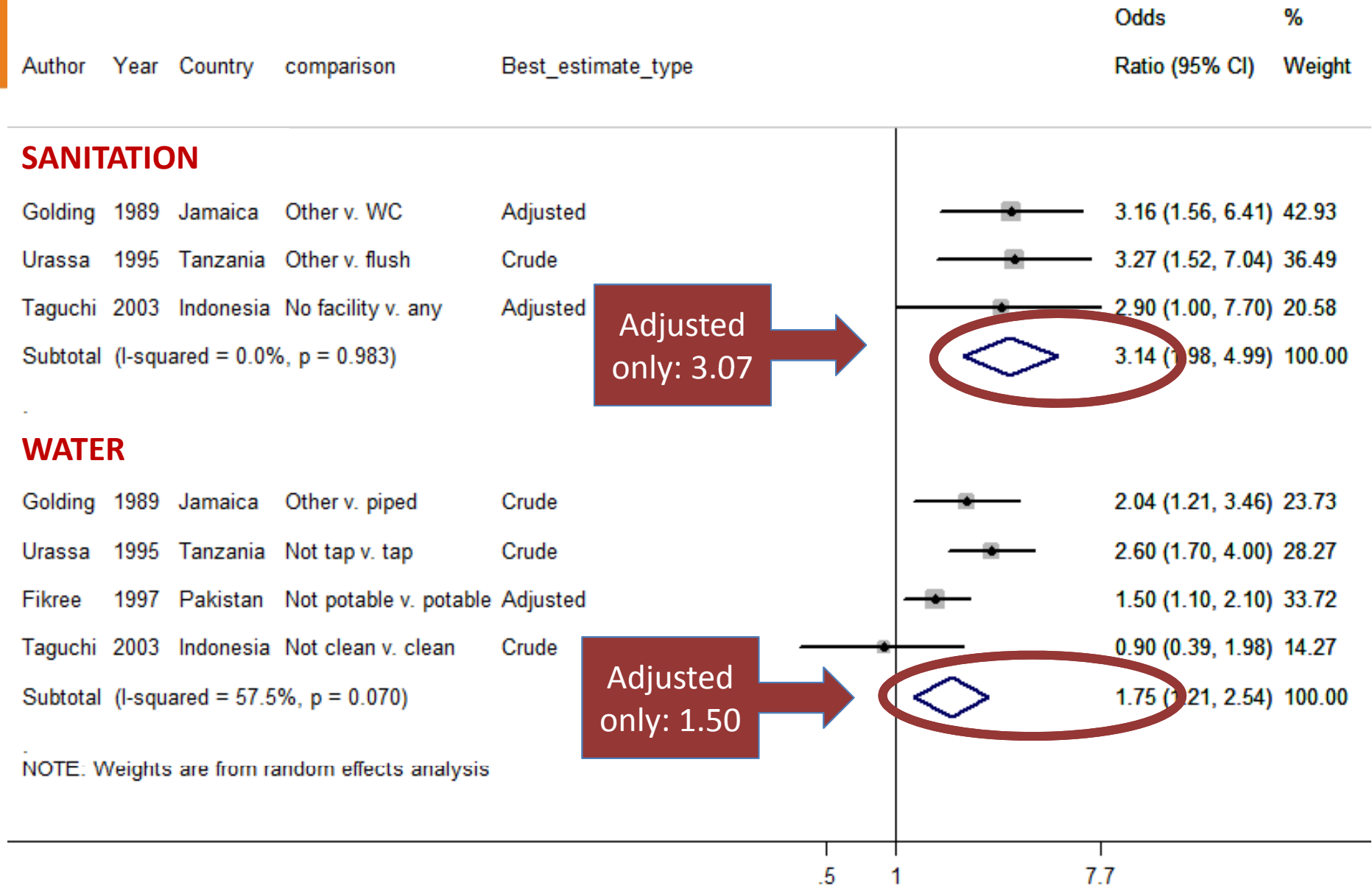
### Evidence base is limited

-14 articles (5 individual-level, 8 ecological, 1 facility-based)

### Observational nature of studies

- Potential for residual confounding, especially by socio-economic status

# Meta-analysis of individual level studies





# **Burden of poor WASH in domestic and facility birth settings**

India, Bangladesh, Malawi, Tanzania

Demographic and Health Surveys



# Definition of WASH in home settings

Using the UN Joint Monitoring Programme definitions for 'improved':

1. 'WASH-safe' = improved water & sanitation
2. 'WASH-unsafe' = lacks either of both



## Improved water source:

- Piped or protected well into dwelling, yard
- Public tap/standpipe or public well
- Neighbour's tap or borehole
- Rainwater or bottled water



## Improved sanitation:

- Flush - to sewer, septic tank, pit latrine
- Pit latrine - ventilated improved pit (vip)
- Pit latrine - with slab
- Composting toilet

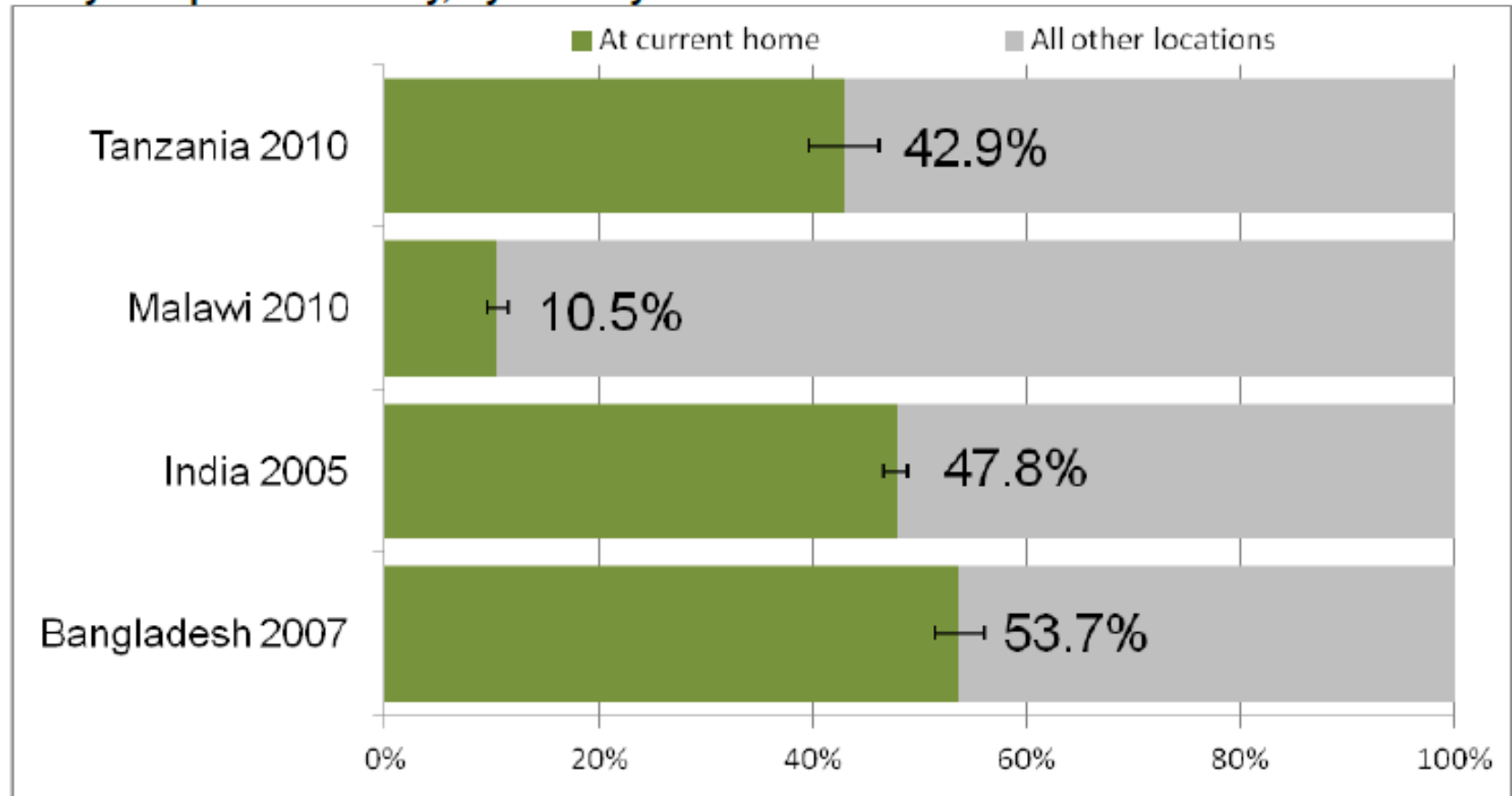
**& is not shared**





# Home births as % of all births

Figure 1. Proportion of births delivered in the current home among all live births in five years prior to survey, by country



Error bars represent 95% confidence intervals of estimates.



# Summary

## What we know

- Plausible biological and social mechanisms link WASH with maternal health
- Poor water and poor sanitation environments are associated with higher maternal mortality
- High burden of poor water and sanitation in domestic and facility birth settings exists
- Existing evidence confirms that benefits of improvement may be substantial



# Summary

## Gaps in evidence

- From 67 identified biological mechanisms, there is no published evidence of link with maternal mortality in 30
- Limitations of observational evidence
- Lack of impact interventions
- Current definitions do not consider quality, distance or cost
- Limited data on hygiene practices (domestic or facility)
- No definition of (birth) facility WASH environments
- Lack of up-to-date facility-level data
- Increase understanding and channel action to improve hygiene on labour wards



# Acknowledgements

## Collaborators

Yael Velleman, WaterAid

Kaosar Afsana, BRAC

Moke Magoma, Evidence for Action (E4A), Tanzania

Bruce Gordon, World Health Organization

## Supported by:

UK Department for International Development (UKAID)  
through the SHARE Research Consortium

[sharesearch.org](http://sharesearch.org)



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