

10<sup>th</sup> KMC International Conference  
Kigali, 17<sup>th</sup> November 2014

# THE LANCET EVERY NEWBORN

Accelerating scale up of KMC,  
what will it take?

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Imperial College, London

With Professor Joy Lawn  
London School of Hygiene & Tropical Medicine

**MARCH**  
centre for  
MATERNAL  
ADOLESCENT  
REPRODUCTIVE &  
CHILD  
HEALTH

LONDON  
SCHOOL of  
HYGIENE  
& TROPICAL  
MEDICINE



# Message from @JoyLawn



- **Sorry** not be with you due to serious family illness
- **Thank you** for all you are doing for women and their newborns around the world, especially in Africa
- **Be inspired** to reach further and do more especially for preterm babies and their mothers – the most vulnerable of the world's humans and finally getting some more attention



World Prematurity Day 17<sup>th</sup> November



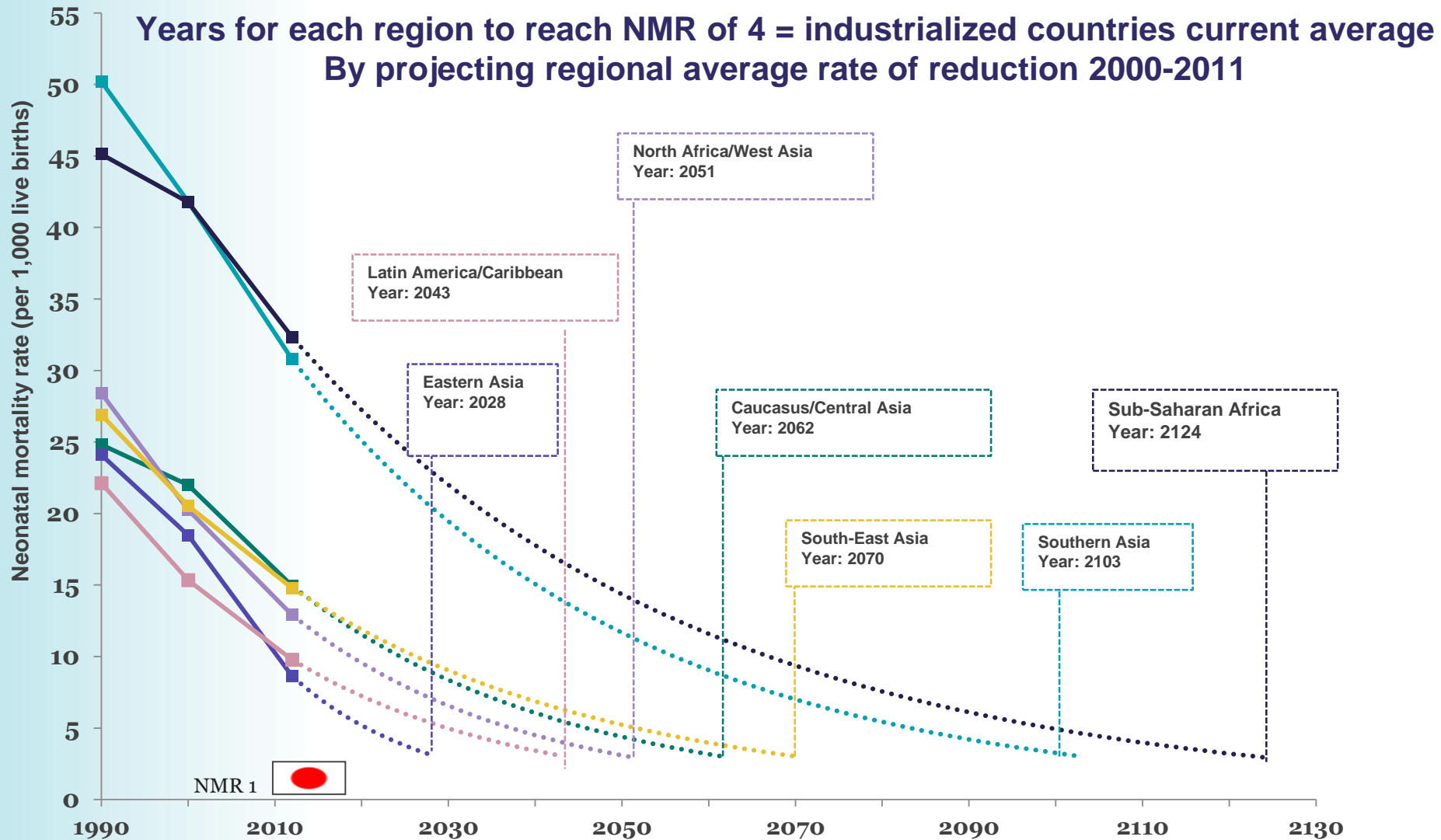
#worldprematurityday



WorldPrematurityDay

THE LANCET

# When will every newborn have the same survival chance as newborns in the richest countries?



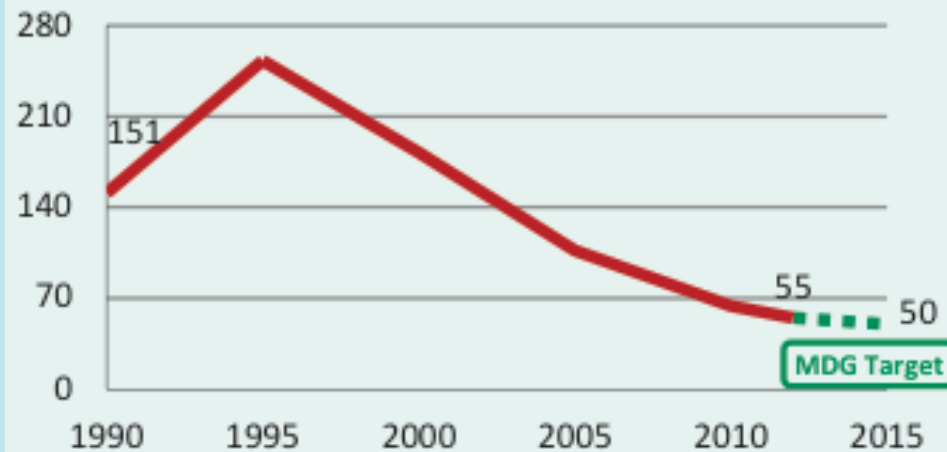
**110 YEARS FOR AFRICAN NEWBORNS...**

Nearly 3 times longer than this change took rich countries, despite new interventions

# Rwanda

## Under-five mortality rate

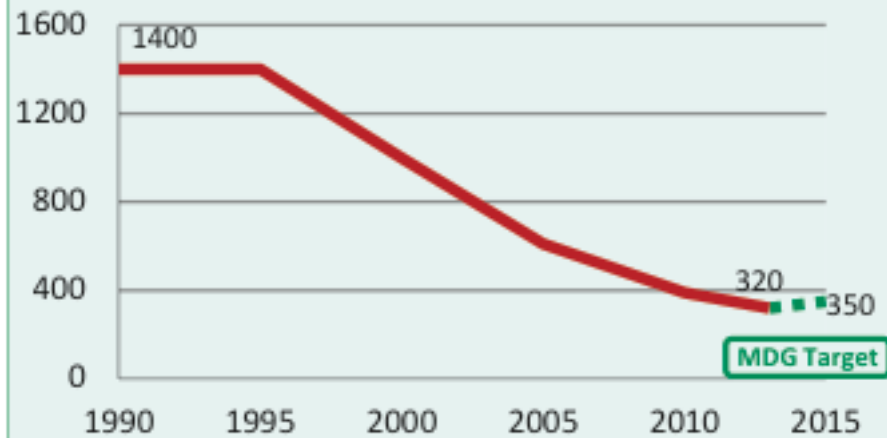
Deaths per 1000 live births



Source: IGME 2013

## Maternal mortality ratio

Deaths per 100,000 live births



Source: MMEIG 2014

*If every country in Africa achieved Rwanda's rate of progress for neonatal mortality reduction, then Africa would more than catch up*

THE LANCET

Lancet GH Sept 2013 : [The Lancet Global Health 2013; 1:e176-e177](#) (DOI:10.1016/S2214-109X(13)70059-7)

# Every Newborn Series

5 papers

6 comments

55 authors from 18+ countries

60+ partner organisations



# THE LANCET

Every Newborn

An Executive Summary for The Lancet's Series



"A healthy start is central to the human life course, with birth holding the highest risk of death, disability, and loss of development potential, leading to major societal effects."

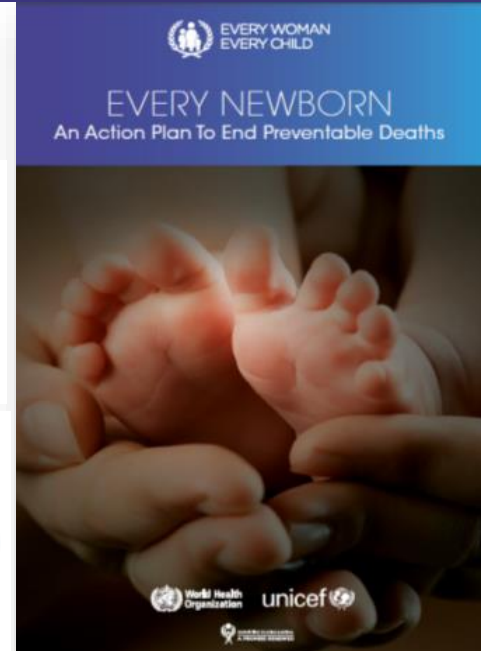
Main funders: Bill & Melinda Gates Foundation, USAID, Children's Investment Fund Foundation

# Every Newborn Action Plan

Based on the evidence from the Series  
Co-led by UNICEF & WHO

Consultation >60 country governments  
>80 organisations, >1000 individuals

World Health Assembly 2014 resolution  
Launched 30<sup>th</sup> June 2014



THE LANCET

[www.lancet.com/series/everynewborn](http://www.lancet.com/series/everynewborn)

#EveryNewborn

A close-up photograph of a woman wearing a light-colored headscarf with dark horizontal stripes. She is holding a newborn baby wrapped in a patterned blanket. The woman's face is partially visible as she looks down at the baby. The background is softly blurred, showing another person's face in the distance. The overall tone is warm and intimate.

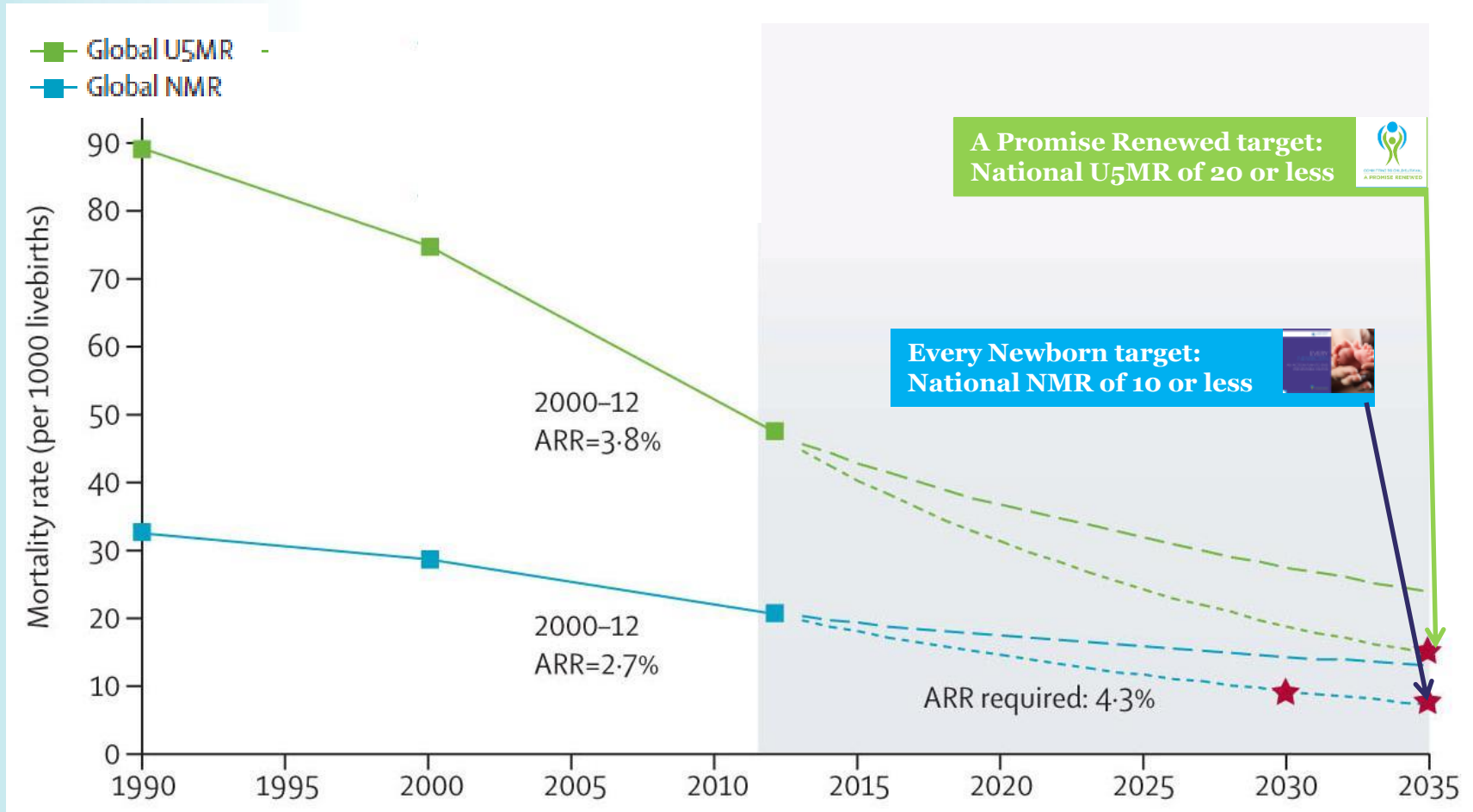
*Every Newborn Series key actions*

# ENDING PREVENTABLE CHILD AND MATERNAL DEATHS

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# Ending preventable child deaths

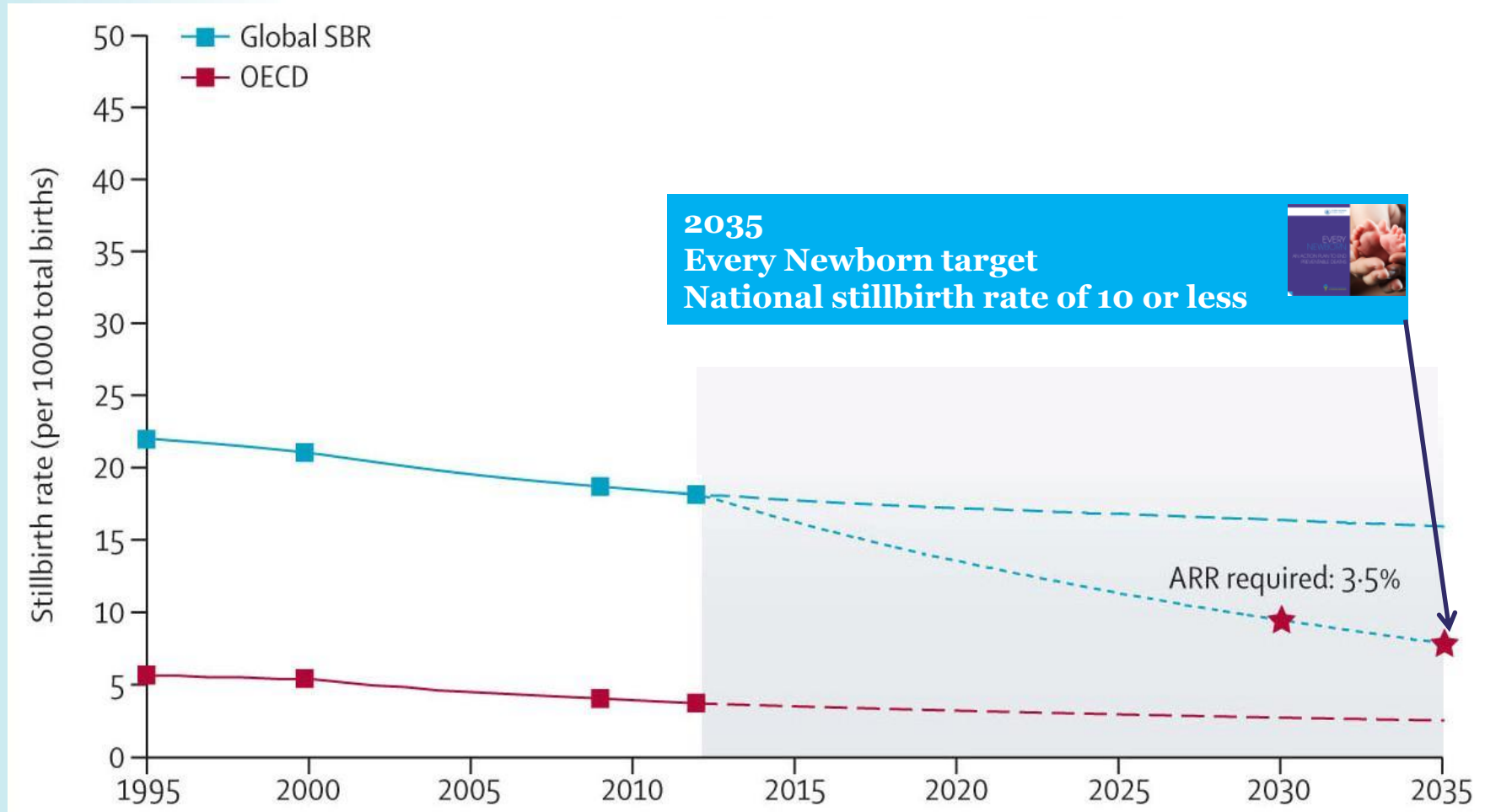


**From 2.9 to 0.8 million neonatal deaths**

About 29 countries will have to more than double their rates of progress

Sub national equity goals also to be set

# Also ending preventable stillbirths



**From 2.6 to 1.1 million stillbirths**

Aligned with NMR target but more ambitious change needed

Sub national equity goals also to be set



# AND ending preventable maternal deaths

Maternal mortality target included in Every Newborn Action Plan

## Ending preventable maternal deaths: the time is now

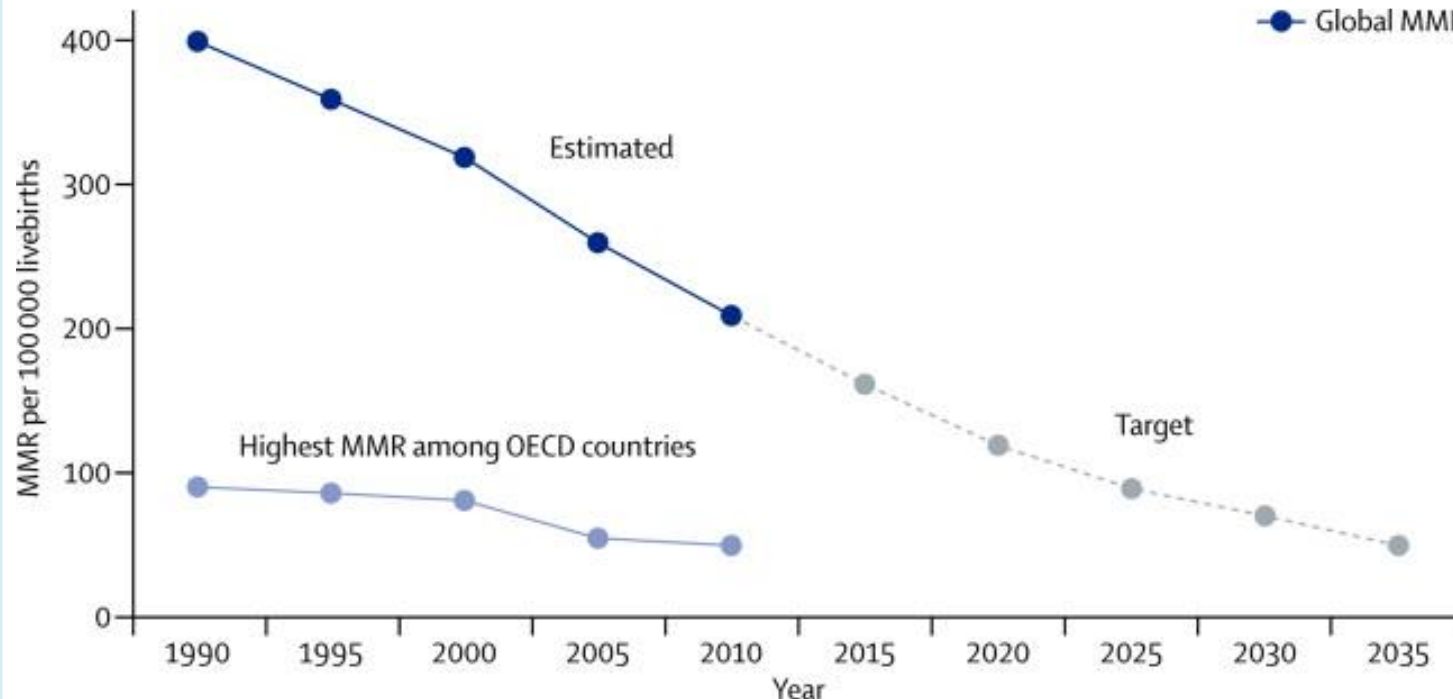


Between 1990 and 2010, maternal mortality decreased globally by nearly 50%, from 543 000 maternal deaths

a bold vision of ending preventable maternal deaths, around which the international community can rally.

Published Online  
August 19, 2013  
<http://dx.doi.org/10.1016/>

● Global MMR



**Global average MMR of 70 per 100,000  
With different targets for different countries**

A woman wearing a headscarf is holding a newborn baby. The image is overlaid with a semi-transparent purple and blue gradient.

*Every Newborn Series key actions*

# PRIORTISING BASED ON THE DATA

THE LANCET

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# Where?

The countries with highest neonatal mortality rates

## Countries with highest neonatal mortality rates

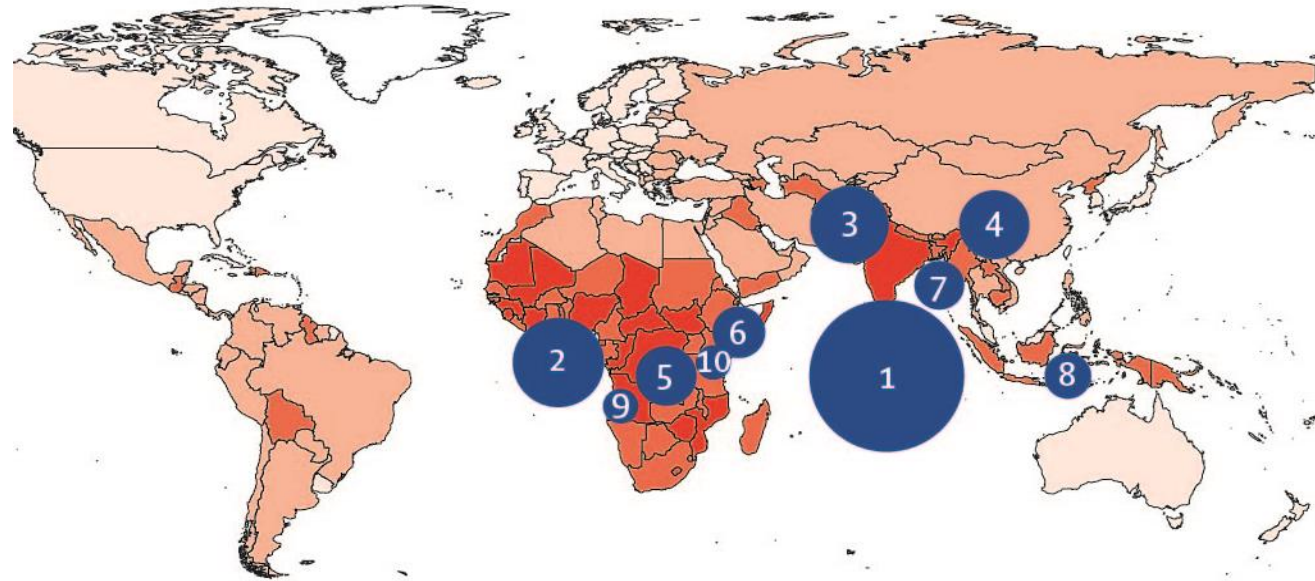
- Cen African Rep (40.9)
- Mali (41.5)
- DR Congo (43.5)
- Lesotho (45.3)
- Angola (45.4)
- Guinea Bissau (45.7)
- Somalia (45.7)
- Sierra Leone (49.5)**

## Countries with highest numbers of neonatal deaths

1. India (779,000)
2. Nigeria (267,000)
3. Pakistan (202,400)
4. China (157,400)
5. DR Congo (118,100)
6. Ethiopia (87,800)
7. Bangladesh (75,900)
8. Indonesia (72,400)
9. Angola (41,200)
10. Kenya (40,000)

Neonatal mortality per 1000 livebirths

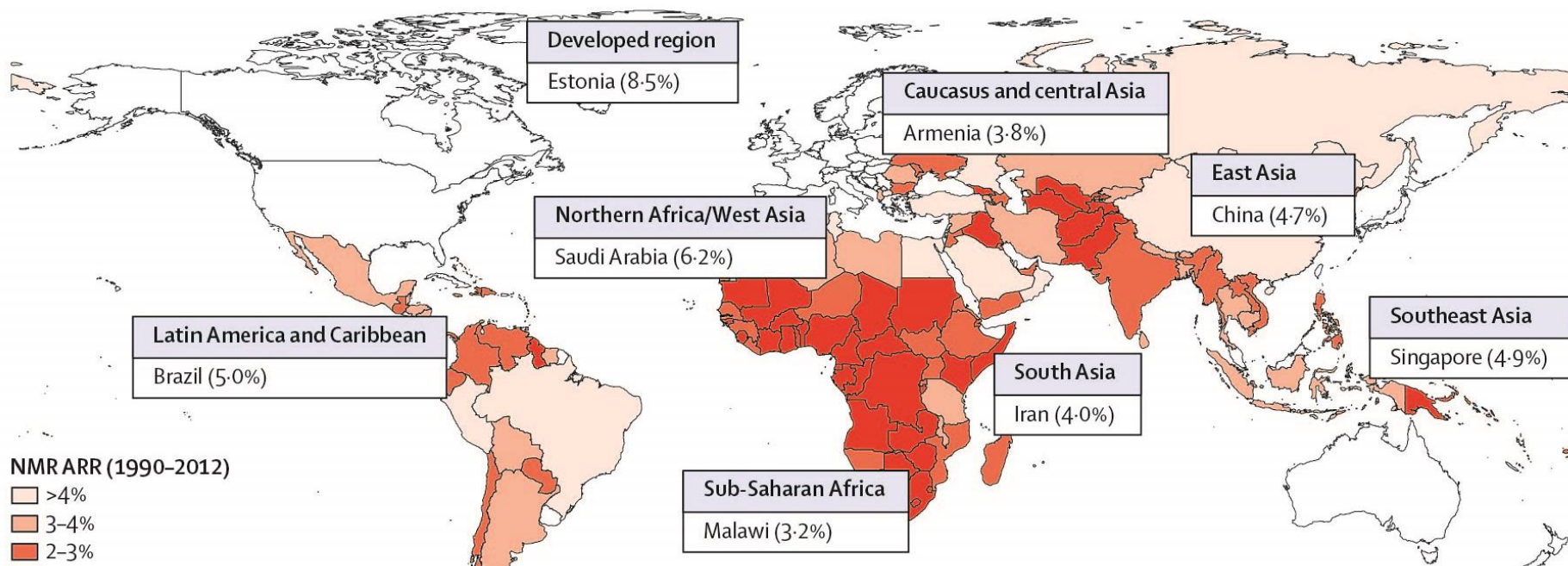
0-5 5-15 15-30 30-50 No data



Source: Lancet Every Newborn series, paper 2

# Where?

Countries in dark red are making slowest progress for newborn survival, 29 countries need to at least double progress to meet post 2015 targets



## Peru



Financial protection measures, health insurance, & linking data to action.

## Malawi



Workforce planning increased numbers and specific skills

## Nepal



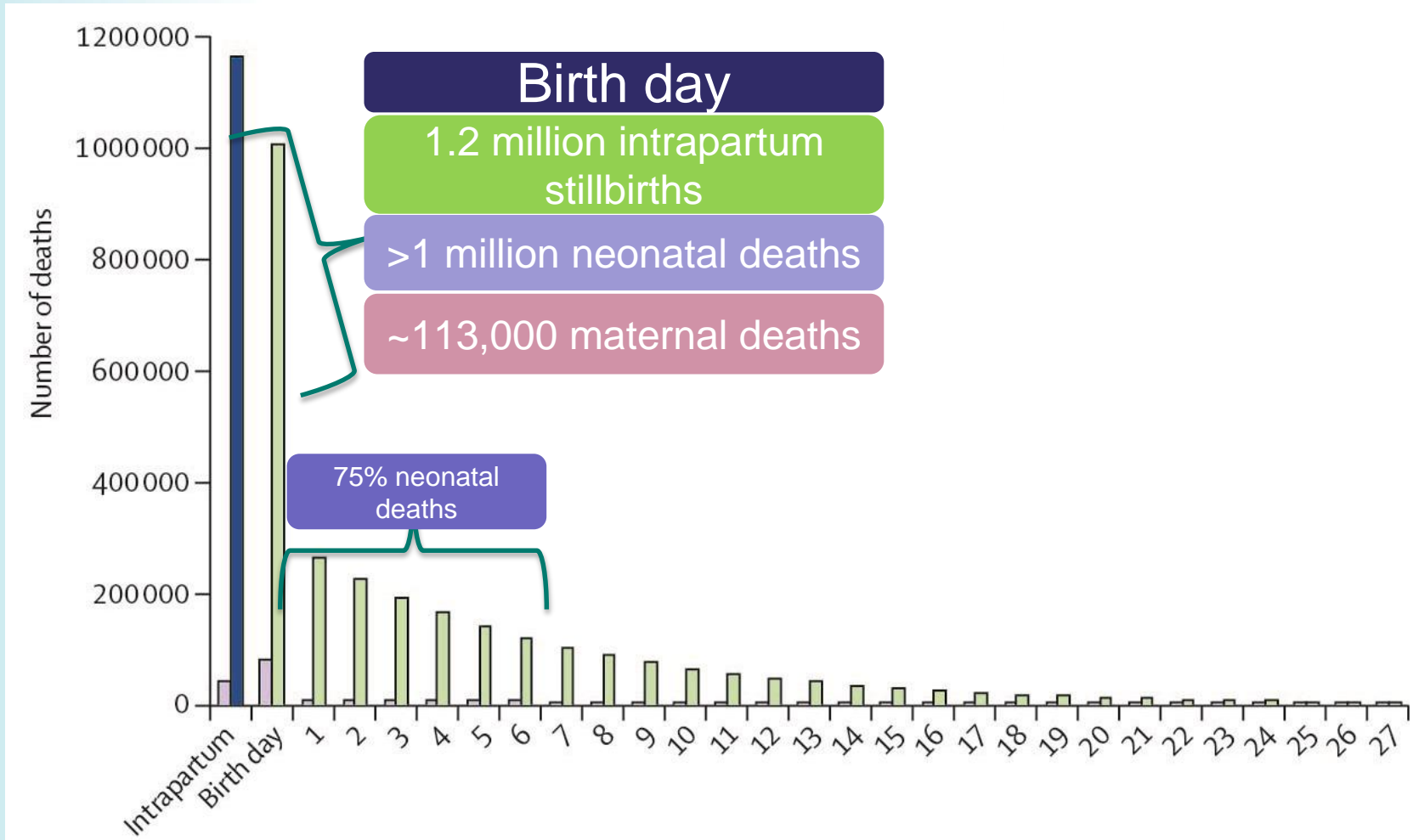
Dynamic leadership, innovative interventions at community level, plus family planning

Source: Lancet Every Newborn series, paper 2

**BUT in every region there are countries with rapid progress**

# When?

For women, stillbirths, newborns, highest risk is at same time

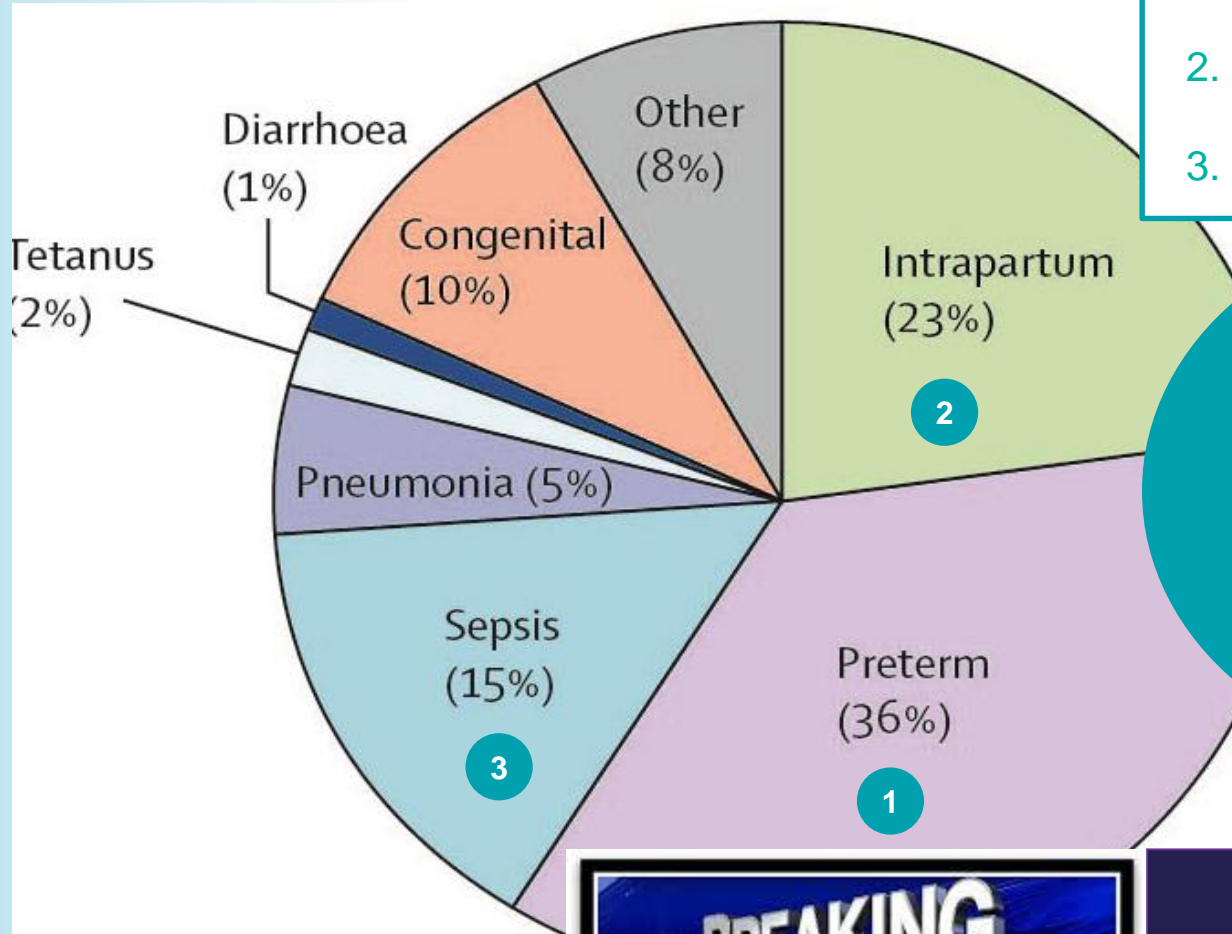


**Birth is the time of greatest risk of death and disability**

**TRIPLE return on investment – quadruple if count development outcomes**

# What?

Which neonatal conditions to focus on?



- 3 main killers for newborns:**
1. Preterm birth (“born too soon”)
  2. Intrapartum complications (“birth asphyxia”)
  3. Neonatal infections

**80% of newborns deaths are in small babies of which 2/3rds are preterm**



**Preterm birth now leading cause of CHILD deaths**

# Beyond newborn survival

The world you are born into determines your survival and your risk of disability



In low income countries the major challenge is still survival  
**BUT** in middle income countries disability is increasing  
Must track and minimise disability as we scale up more complex neonatal care

**15 million babies are born too soon every year...**



## Survival gap

**10**

**90**

*Over 90% of extremely preterm babies (<28 weeks) born in high-income countries survive; yet less than 10% of these babies survive in low-income settings.*

**YET most of the 1 million deaths due to preterm complications could be saved before neonatal intensive care is available eg with Kangaroo Mother care BUT for preterm birth prevention, limited impact so far**



A close-up photograph of a woman holding a newborn baby. The woman is wearing a striped headband and has her eyes closed, appearing to be in a state of rest or affection. The baby is wrapped in a patterned blanket. The image is overlaid with a semi-transparent purple and blue gradient.

*Every Newborn Series key actions*

# FOCUS ON SCALING UP KMC: WHAT HAVE WE LEARNT? WHAT WILL IT TAKE?

# Kangaroo Mother Care

## Definition

### What?

- Continuous, prolonged, early skin to skin contact between a baby and mother/other adult (over 18 hours/day)
- Provides warmth, promotes breastfeeding, reduces infections and links with additional supportive care, if needed

### Who for?

- Preterm/low birthweight babies (i.e. <2000g as marker of preterm birth approx 34wks)
- Clinically stable

### Where?

- Evidence base so far is for facility based initiation with community follow up. Usually results in earlier discharge from facility.
- As yet not enough evidence for community initiation of KMC



# Evidence Action

A predictable timeline?

First tested in preterm infants in Bogota, Colombia

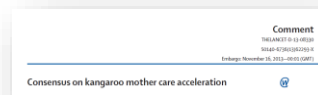
Formally defined and adopted at international conf in Trieste, Italy

WHO recommends facility KMC; first implementation guide

cKMC trial Bangladesh shows no mortality benefit



Istanbul consensus published in Lancet (World prem day)



1970

1980

1990

2000

2010

2012

2013

Skin-to-Skin first evaluated in term infants

2<sup>nd</sup> Cochrane review, no mortality effect



Mortality benefit of reported by Cochrane review



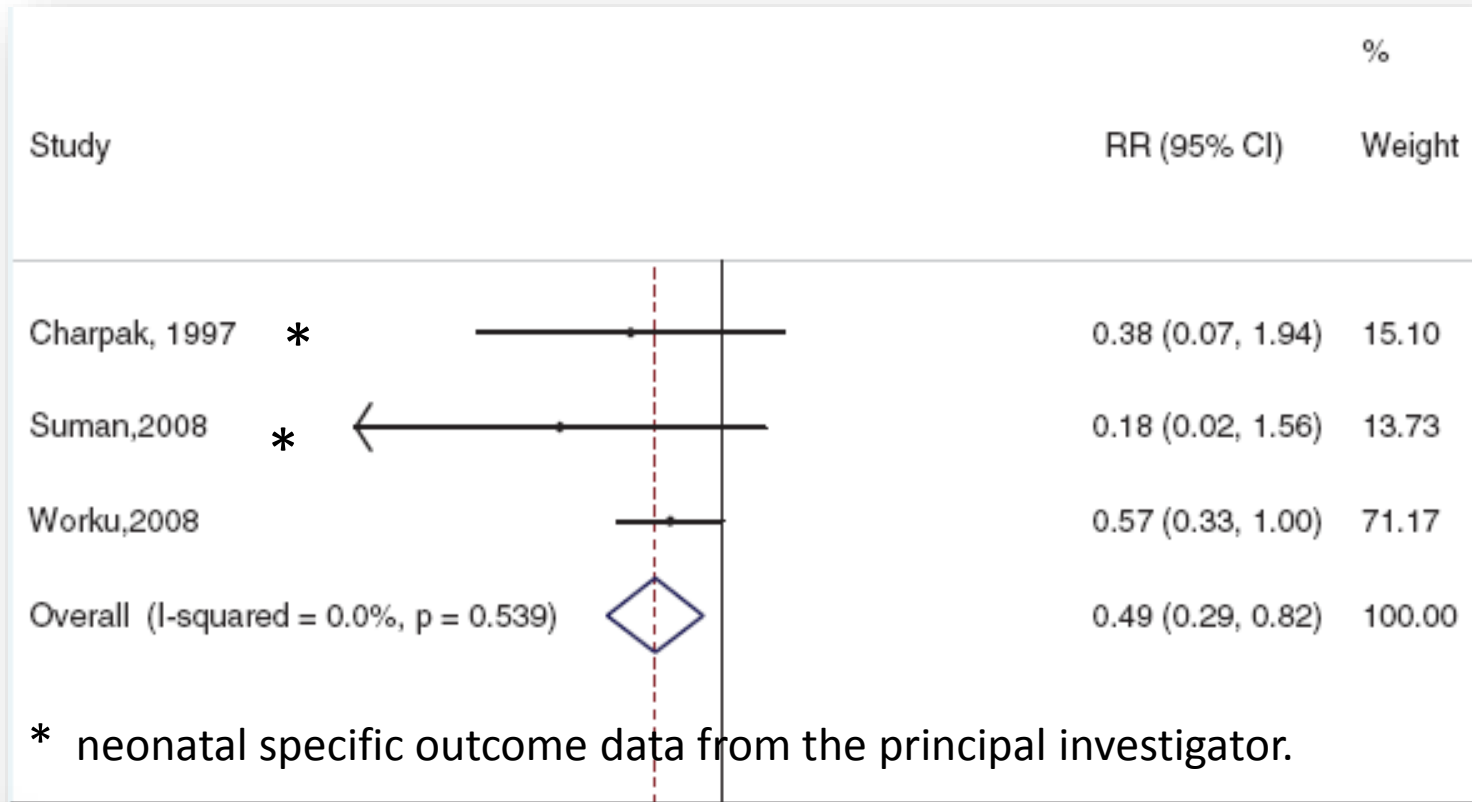
1<sup>st</sup> Cochrane review, shows many benefits but no mortality effect

IJE meta-analysis shows first meta of mortality effect of KMC



World prem day attention KMC network 9<sup>th</sup> International meeting, India

# Meta-analysis of effect on neonatal mortality of facility-based KMC (3 RCTs, N 1075)



**RR 0.49 (0.29, 0.82)**

**51% reduction in neonatal mortality  
 for neonates <2000 g with facility-based KMC**

**Could save an estimated 400,000 babies each year  
 if reached 95% of preterm babies (LiST analysis)**

# A four-country evaluation of KMC implementation

Question: What works or does not work for scaling up KMC in 4 different countries?

NMR  
Per  
1000  
births

Malawi

27



Mali

49



Rwanda

21

REPUBLIC OF RWANDA



MINISTRY OF HEALTH

Uganda

28



Aims:

- Assessment of institutionalisation of KMC in facilities
- Barriers and facilitators to sustainable implementation



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA



Save the Children



USAID  
FROM THE AMERICAN PEOPLE

# Methodology for four-country implementation assessments

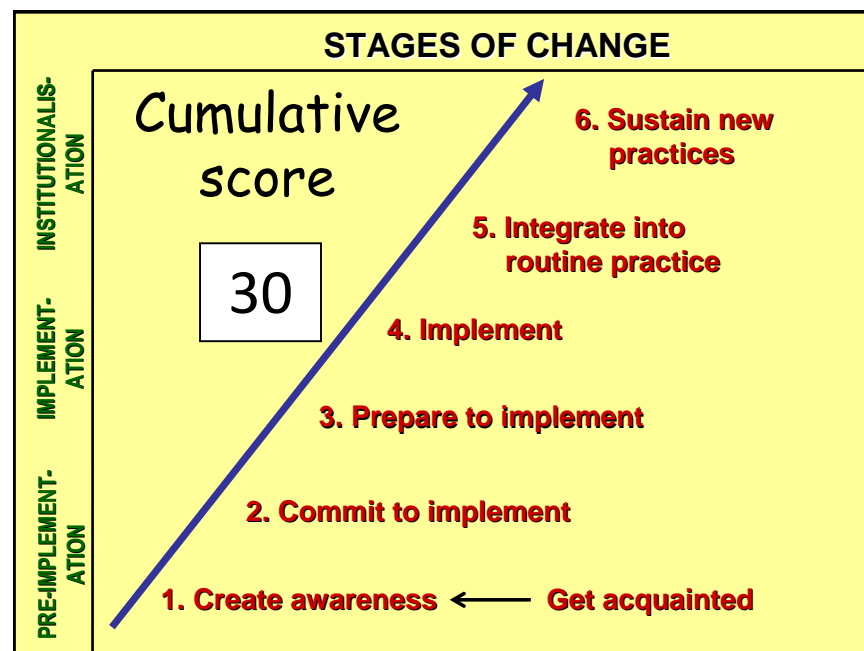
- Standardised assessment tools for facilities

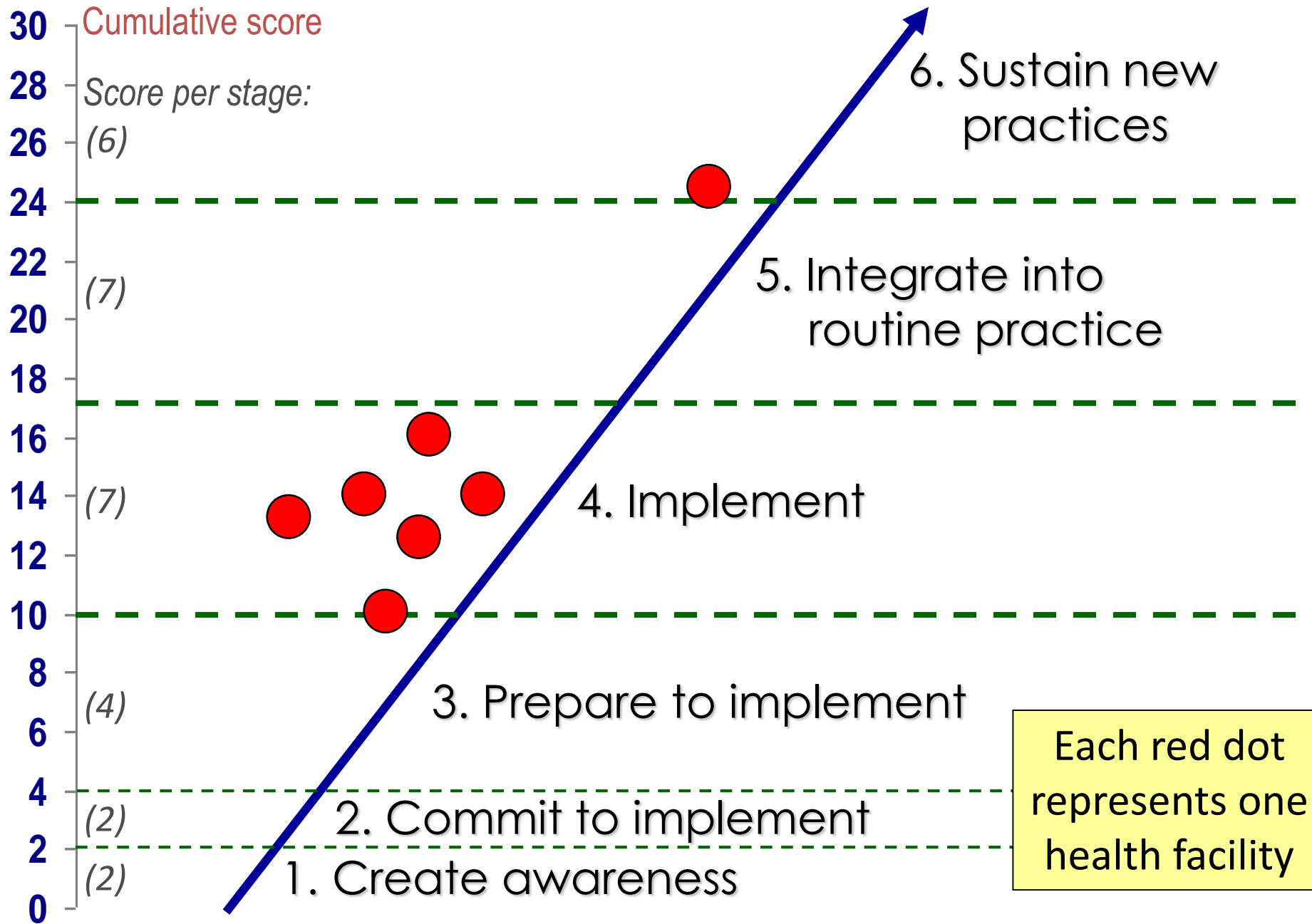
- Key-informant interview guide
- Checklist for observations
- Quantitative and qualitative items

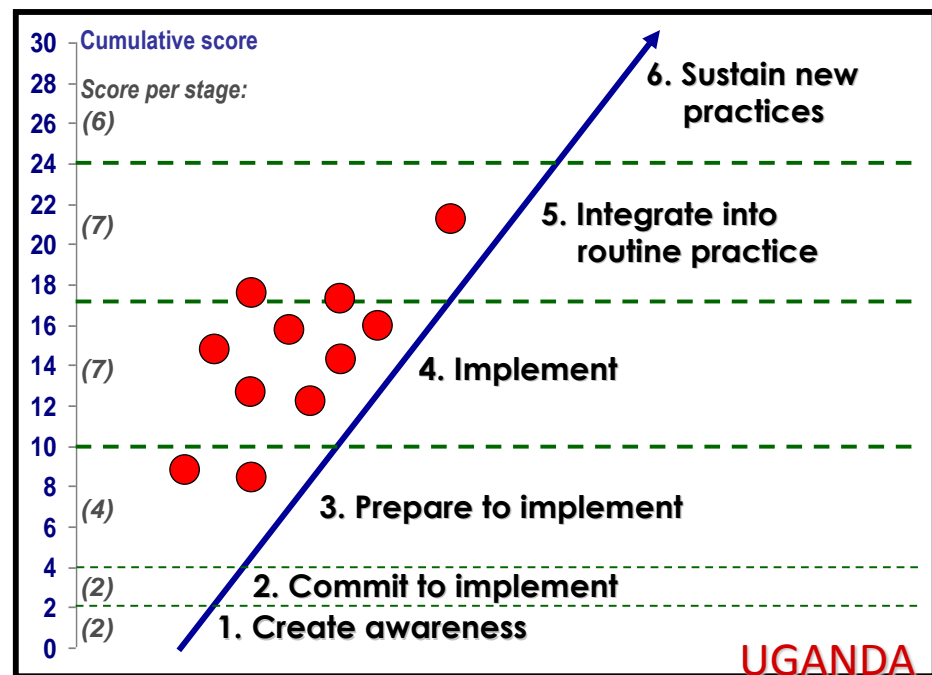
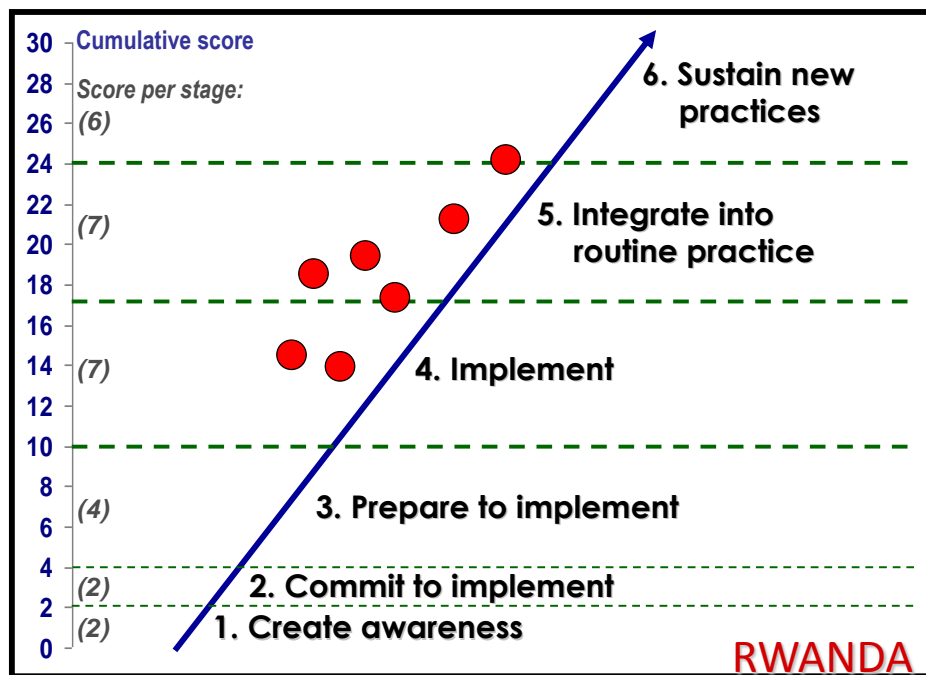
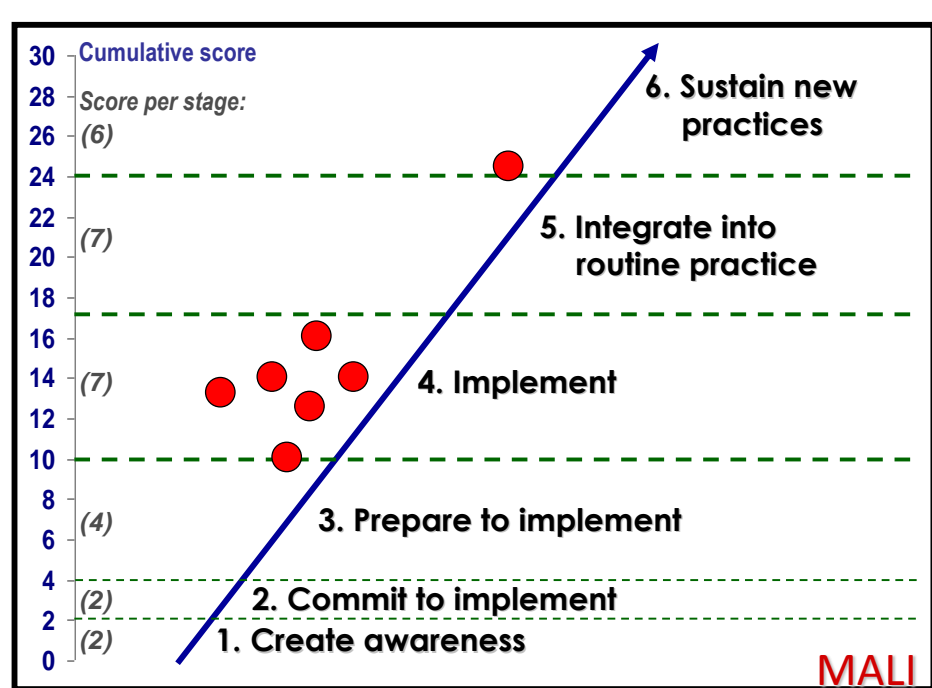
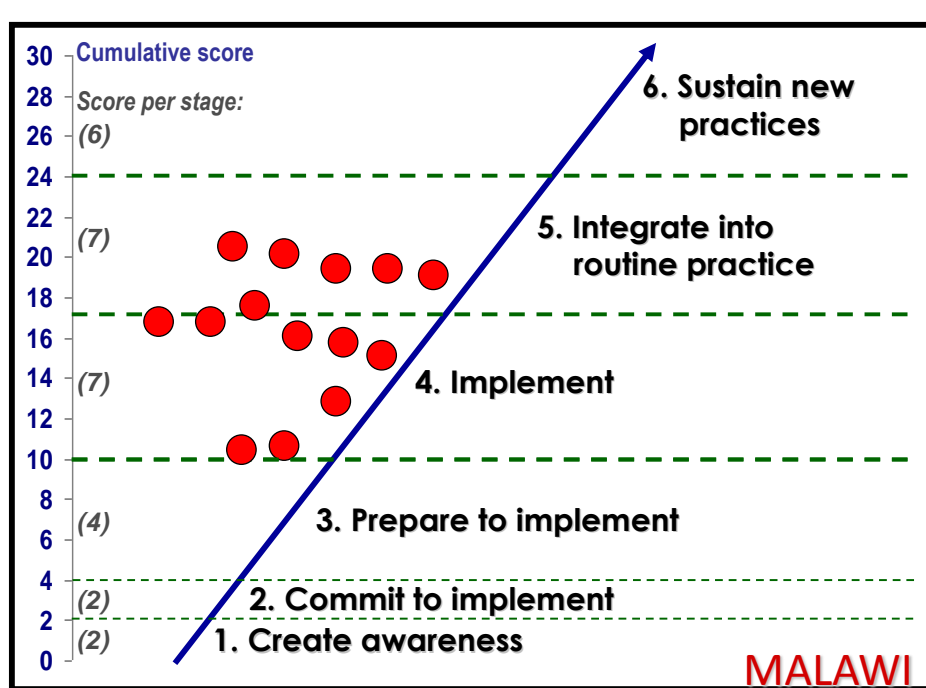


- Standardised progress monitoring model

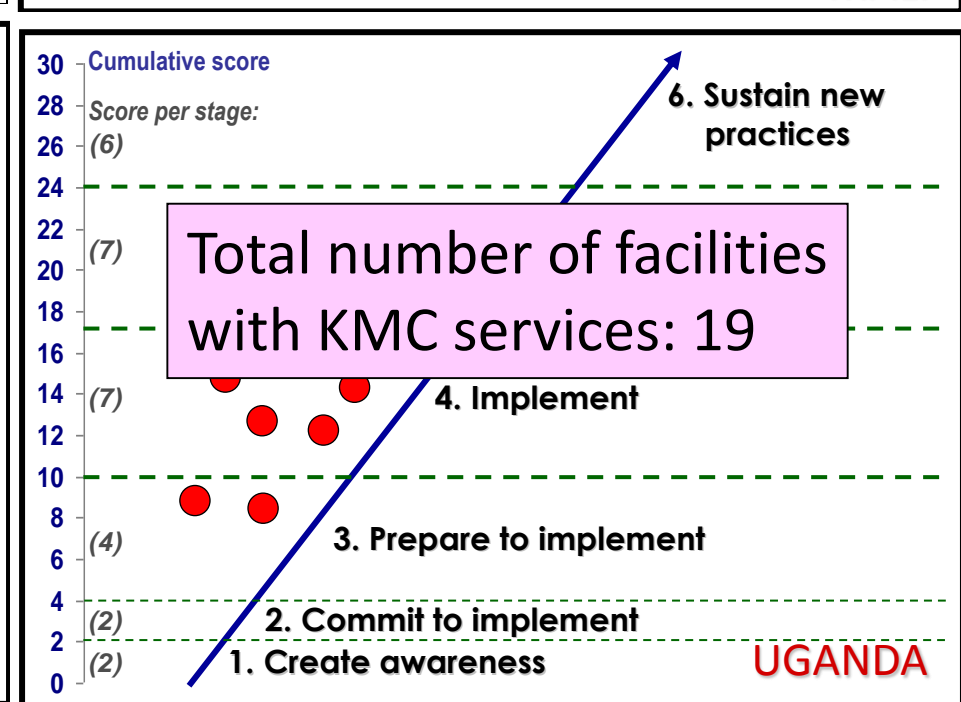
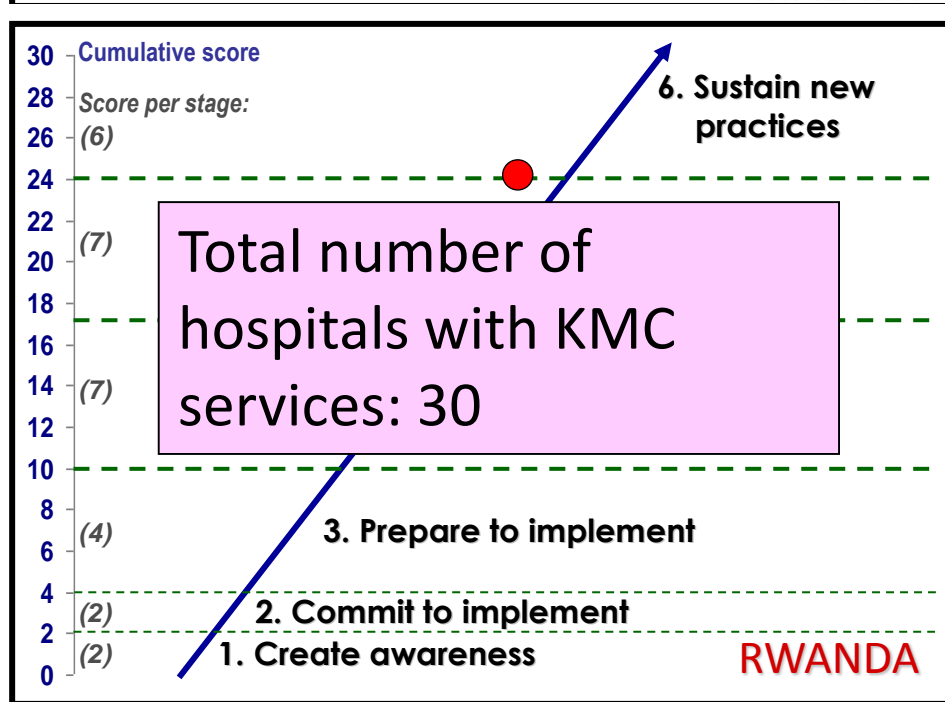
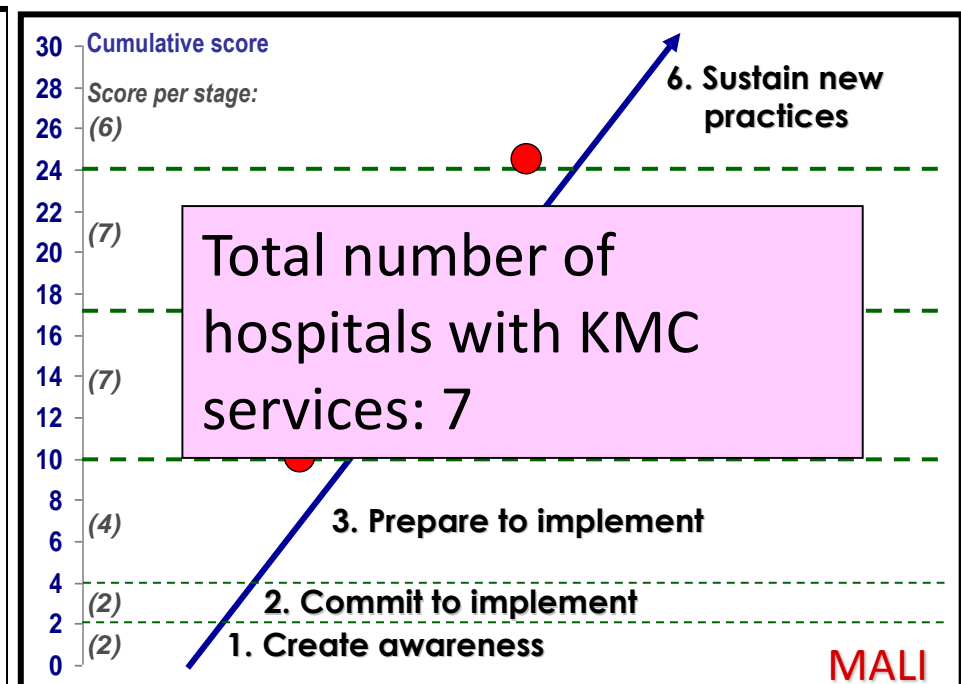
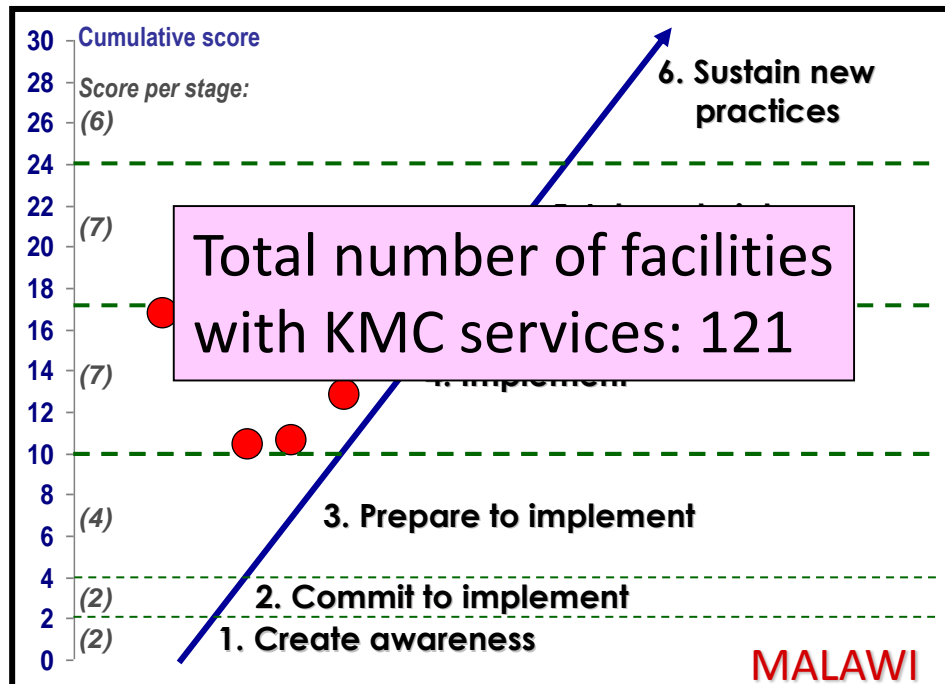
- Used in other countries eg South Africa, Malawi, Ghana, Nigeria, Indonesia













# Lessons learned about scale up

## Preparation and national buy-in

- Establish a Ministry of Health led national level stakeholder process
- Identify national champions to understand and address the barriers to expansion
- Interact with policymakers, service providers and donors regarding the evidence
- Enable learning visits to see KMC, if needed in another country

## Planning, introduction of implementation

- Develop national policy/strategy, service guidelines, training materials, job aids, supervisory systems and indicators
- Adapt KMC to the local setting and culture eg a local name
- Establish learning centres strategically
- Promote district ownership and systems focus

## Institutionalizing, increasing coverage and quality

- Integrate with other relevant training packages and supervision systems
- Integrate indicators and use data to review service coverage and quality
- Expand newborn care services using KMC as an entry point to improve the care of preterm babies

# Practicalities

## Setting up

1. Where to have a KMC unit?
2. What equipment are needed?
3. Which workers can support KMC?
4. Protocols and job aids?
5. How much does it cost?

**All of these are also context specific  
implementation research questions!!**

# 1. Where? Which sites?

Principle of expanding KMC services to peripheral levels of health system and addressing equity

## Site assessment is critical

### 1. Need for KMC and expected case load

- Total # LBW born/admitted and total deliveries
- Total # deaths of LBW - past 6 months
- Current care for preterm/LBW

### 2. Readiness of space and staff

- Hosp. management buy in
- Staff available and willing – is there a champion?
- Space? What if no space is available? Renovation vs using existing space



# Rwanda

KANGOUROU  
MOTHER  
CARE ROOM I



# 2. What is needed?

## Essential Equipment/Supplies

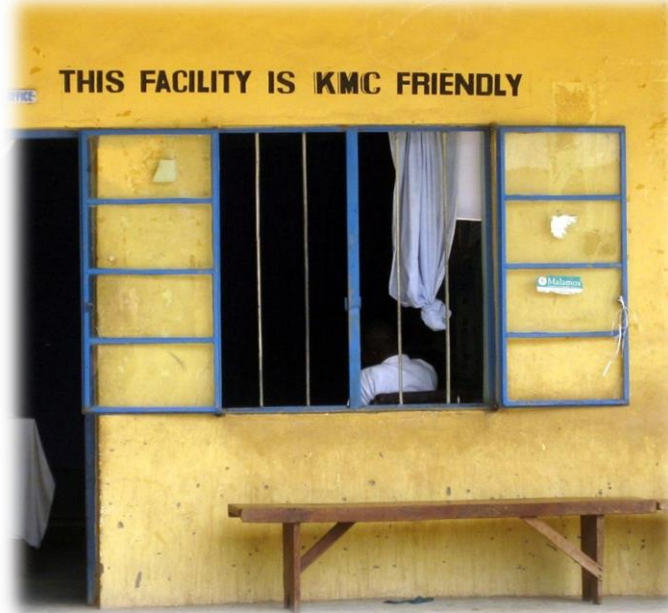
- Cloth for wrapping baby (from mother or facility)
- Beds, mattresses, linen
- Graduated feeding cups
- Wall thermometer
- Body thermometer (low reading)
- Baby weighing scales (digital)
- Suction machine (foot or electrical)
- Ambu bags and masks (suitable size)
- NG tubes (size 4,5,6)
- Wall room heaters
- Mosquito nets (ITNs) where malaria is endemic
- Others eg fridge for storing breastmilk, oxygen condensor



# 3. Who can support KMC?



**Doctors**



**Mothers as peer support**



**Midwives and Nurses**



**Patient attendants**



**Fathers and other caregivers**

# 4. Protocols on feeding and discharge

- **Guidelines**

- National Malawi, Nepal, South Africa, Tanzania
- South Africa KMC clinical guidelines at Kalafong hospital
  - Guidelines for doctors working in the KMC unit and for nurses
  - Guidelines for the ward clerk
  - Guidelines for mothers admitted to the KMC unit
  - Feeding guidelines
  - Guidelines to manage the electronic scale
  - Admission and discharge guidelines

- **Clinical Records**

- Intermittent KMC chart example from Kalafong hospital, South Africa
- KMC daily notes used in the KMC unit at Kalafong hospital, South Africa
- KMC follow-up document from the WHO KMC practical guide
- KMC individual patient statistics form used in Kalafong hospital, South Africa
- Pre-discharge score sheet and explanation of how to complete the sheet

- **Job aids**

- Outreach Counselling Cards for birth preparedness, danger signs, from Save the Children Malawi (folder)
- Checklist for discharge from the KMC unit from Kalafong Hospital, South Africa
- Feeding guide for low birth weight infants from Kalafong Hospital, South Africa
- Feeding guide from the Managing Newborn Problems WHO guide
- How to express breastmilk visual guide
- How to feed expressed breastmilk visual guide
- How to hand express breastmilk visual guide
- Why express breastmilk visual guide
- How to identify the low birth weight baby from the Malawi KMC training manual
- What to do with apnoea from the Malawi KMC training manual
- What to do in case of a newborn death from ACCESS KMC training manual
- KMC information brochure for mothers from Kalafong Hospital, South Africa
- KMC information brochure for mothers from Bangladesh
- Guide to cup feeding procedures
- Jaundice management guide
- AFASS HIV feeding choice assessment guide
- Nursing daily observations and monitoring
- Early communication intervention
- KMC positioning during transport
- Yezingane Network and Unicef. Frequently Asked Questions about breastfeeding in the context of HIV. South Africa, 2010.



Toolkit now on  
Healthy Newborn  
Network:  
Multiple policies,  
protocols, job aids you  
can adapt

[www.healthynewbornnetwork.org](http://www.healthynewbornnetwork.org)



# More information on KMC toolkit

## Section A: Visual Materials

KMC posters, PowerPoint presentations, illustrations

## Section B: KMC Implementation

Articles on implementation, Implementation guides

## Section C: KMC Training Materials

Articles and resources, KMC curriculum options,  
Training manuals

## Section D: KMC Practice

Clinical Records, Guidelines, Job aids, Standing orders

## Section E: KMC Monitoring and Evaluation

KMC workbook, KMC register and summary tools

## Section F: Community KMC



# 5. Available cost data re KMC

## Specific examples

Set up costs	Structural costs	<ul style="list-style-type: none"><li>• Adaptations to hospital structure (e.g., New KMC ward, follow-up clinic)</li><li>• Equipment (e.g., Heaters, scales)</li></ul>
	Human resource costs	<ul style="list-style-type: none"><li>• New staff for KMC training, monitoring, and supervision</li><li>• Training costs</li></ul>
	Supply costs	<ul style="list-style-type: none"><li>• Basic supplies: Lockers, chairs/tables, recreational material</li><li>• KMC supplies: Milk expression tools</li></ul>
Operating costs	Facility costs	<ul style="list-style-type: none"><li>• Hospital bed cost</li><li>• Cost of clinic operations</li></ul>
	Human resource costs	<ul style="list-style-type: none"><li>• Staff salary</li><li>• Continual training costs</li></ul>
	Supply costs	<ul style="list-style-type: none"><li>• Basic supplies: Toiletries, linen, food</li><li>• KMC supplies: Diapers, KMC wrap, baby hat and socks</li><li>• Drugs</li></ul>

### Actual cost depends on:

- existing infrastructure
- expected complexity of rest of preterm care service
- Human resource needs
- etc.

# Challenges for KMC implementation

## 1. Demand for KMC

- Mother, societal
- Doctor or other healthcare workers
- (Hospital management)

## 2. Space

## 3. Low quality implementation

- Poor support for feeding or care of illness
- Gaps in note keeping
- Lack of effective follow up after discharge

## 4. Threats to continuity

- Death of a baby
- Key staff member leaves

**No coverage data for KMC – may be possible through household surveys but also possible for facilities, districts to track progress**



# Demand side barriers and mother's perspective, acceptance

"Mothers can be scared of preterm babies – they don't want to hold them because they are worried that they will hurt the baby."  
- neonatologist, Ghana

"Culturally, the grandmothers and mother-in-laws have absolute say. If they do not support KMC, it's hard for the young moms to practice it."  
- neonatologist, Ghana



"Even the most dedicated mother needs someone to take over KMC once in a while. If there's no one around or willing to help, they might just have to put the baby down."  
- KMC trainer, South Africa

Important to undertake formative research to find out what is believed and why and design targeted strategies

Eg Malawi used radio campaign and grandparent champions



# Barriers

## Staff acceptance, uptake

"Doctors often view KMC as a "poor man's" treatment, which is inferior to high-tech interventions like incubator care."  
- neonatologist, Ghana



" When I heard about KMC, I was appalled! These are very sick babies - why would we taken them out of the incubator and try something like this? "  
- NICU nurse, South Africa

"In some ways, incubators are an easier solution for the physician. Moms can have a hard time...they can complain. Doctors may not want to deal with that."  
- MNCH program officer



# KMC research questions

- **Bringing services closer to home:**
  - Effectiveness and safety of community initiation of KMC
  - Expanding KMC from hospitals to health centres – feasibility, cost, effect on quality?
- **Innovation for challenging settings:**
  - Intermittent KMC
  - Task shifting
- **Training models** Shorter, integrated off-site training or on-site facilitation and support
- **Cost:** to the health system and to family, also noting cost savings
- **Tracking:** Indicators for process and coverage



A woman wearing a hospital gown and a headband is holding a newborn baby. The woman is looking down at the baby with a gentle expression. The baby is wrapped in a patterned blanket. The background is a soft, out-of-focus light color.

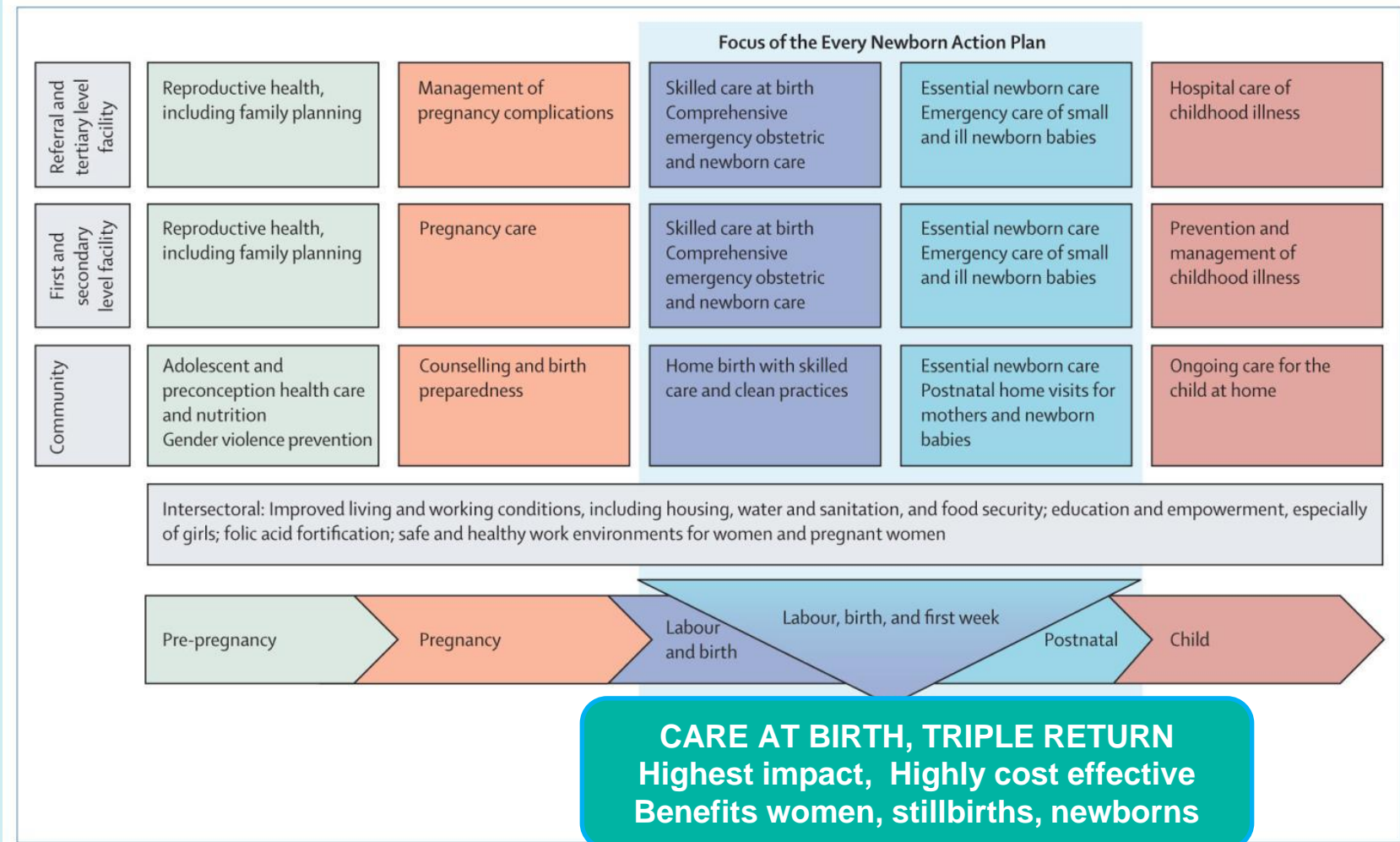
*Every Newborn Series key actions*

# INVESTING FOR A TRIPLE RETURN

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# Packages of integrated care for women and children



Source: *Lancet Every Newborn series, paper 5*

THE LANCET



*Care at birth, and care of small and sick newborns*  
*First opportunity is the QUALITY gap for facility births*



**Could save 2 million lives a year by closing this quality gap**

Particular focus on health workers especially midwives

“Every Mother Every Newborn” quality initiative

Source: *Lancet Every Newborn series, paper 3*

THE LANCET

A woman wearing a hospital gown and a headband is holding a newborn baby. The woman is looking down at the baby with a gentle expression. The baby is wrapped in a patterned blanket. The background is a soft, out-of-focus light color.

*Every Newborn Series key actions*

# SEIZING THE UNPRECEDENTED OPPORTUNITY: THE **ACTION PLAN**

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A woman wearing a headscarf is shown in profile, holding a newborn baby. The image is overlaid with a semi-transparent purple and blue gradient. The text is positioned on the left side of the image.

*Every Newborn Series key actions*

# SEIZING THE UNPRECEDENTED OPPORTUNITY: THE **ACTION PLAN**

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## Strategic objective 1:

Strengthen and invest in care during labour, birth and the first day and week of life



**Strategic objective 2:**  
Improve the quality of maternal  
and newborn care



## Strategic objective 3:

Reach every woman and newborn  
to reduce inequities



## Strategic objective 4:

Harness the power of parents,  
families and communities



## Strategic objective 5:

Count every newborn – measurement, programme tracking and accountability



# 5.4M

Babies enter and leave the planet without a birth or death certificate



Source: Lancet Every Newborn series

2.8  
million

Newborn deaths each year  
(babies in 1<sup>st</sup> month of life)

2.6  
million

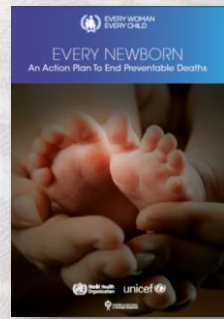
Stillbirths each year  
(babies in last 3 month of pregnancy)

EVIDENCE TO ACTION

Count every newborn....  
as well as women & children

Newborn deaths CAN be prevented

# *Every Newborn Call for action*



## Goals in post-2015 development framework

- Explicit national goals for neonatal mortality and stillbirths

## Milestones to report to World Health Assembly

- *Every Mother Every Newborn* Quality Initiative.
- Measure core *Every Newborn* indicators everywhere, operationalise perinatal audit
- More attention and innovation for reduction of stillbirths

## Implementation at national level and investment

- Update national health strategies to include *Every Newborn* mortality goals, coverage targets, and milestones, and objectives
- Programme investments from governments, donors and existing global funds
- Research – both implementation and upstream research investments

## Development of leadership, champions

## Power of parent voices

THE LANCET

Source: *Lancet Every Newborn series, paper 5*

[www.lancet.com/series/everynewborn](http://www.lancet.com/series/everynewborn)

#EveryNewborn

We have the potential to transform survival *and* health for EVERY newborn EVERY mother including for the world's poorest families –

Will we act on the action plan?

Get involved..

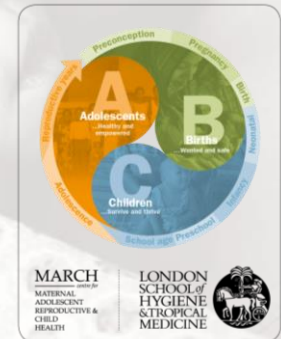
[www.everynewborn.org](http://www.everynewborn.org)

#EveryNewborn

[www.healthynewbornnetwork.org](http://www.healthynewbornnetwork.org)

THE LANCET

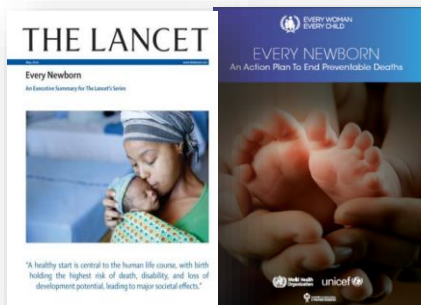
[www.lancet.com/series/everynewborn](http://www.lancet.com/series/everynewborn)



@joylawn

[march.lshtm.ac.uk](http://march.lshtm.ac.uk)

# More information



## LANCET EVERY NEWBORN

<http://www.thelancet.com/series/everynewborn>

## EVERY NEWBORN ACTION PLAN

[www.everynewborn.org](http://www.everynewborn.org)



## BEYOND SURVIVAL

<http://www.nature.com/pr/journal/v74/n1s/index.html>



## BORN TOO SOON report and BMC series

<http://www.reproductive-health-journal.com/supplements/10/S1>



## A PROMISE RENEWED

<http://www.apromiserenewed.org/>

## Every Newborn

[www.everynewborn.org](http://www.everynewborn.org)  
[www.Healthynewborn.org](http://www.Healthynewborn.org)



#EveryNewborn

@joylawn

## World Prematurity Day 17th November



#worldprematurityday



WorldPrematurityDay