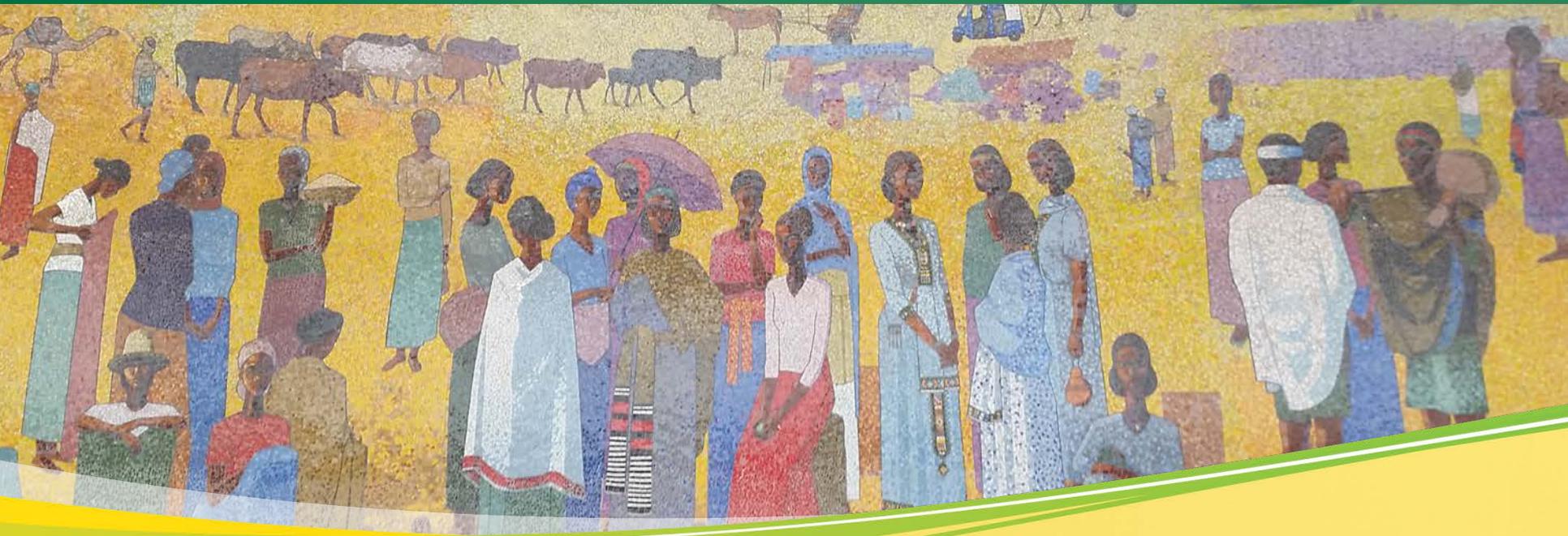


# Quality improvement in resource-limited areas

Khalid Aziz, Professor, Department of Pediatrics

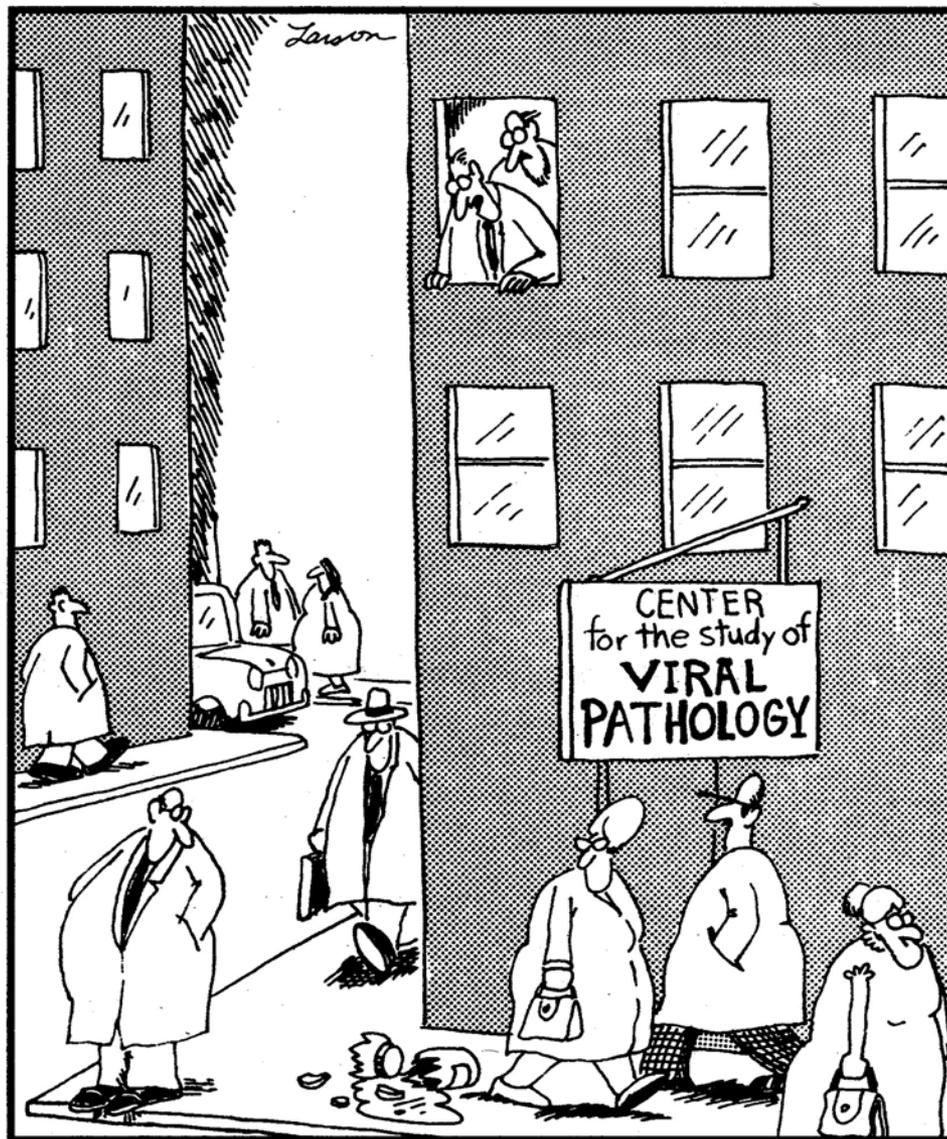


*“uplifting the whole people”*

— HENRY MARSHALL TORY, FOUNDING PRESIDENT, 1908

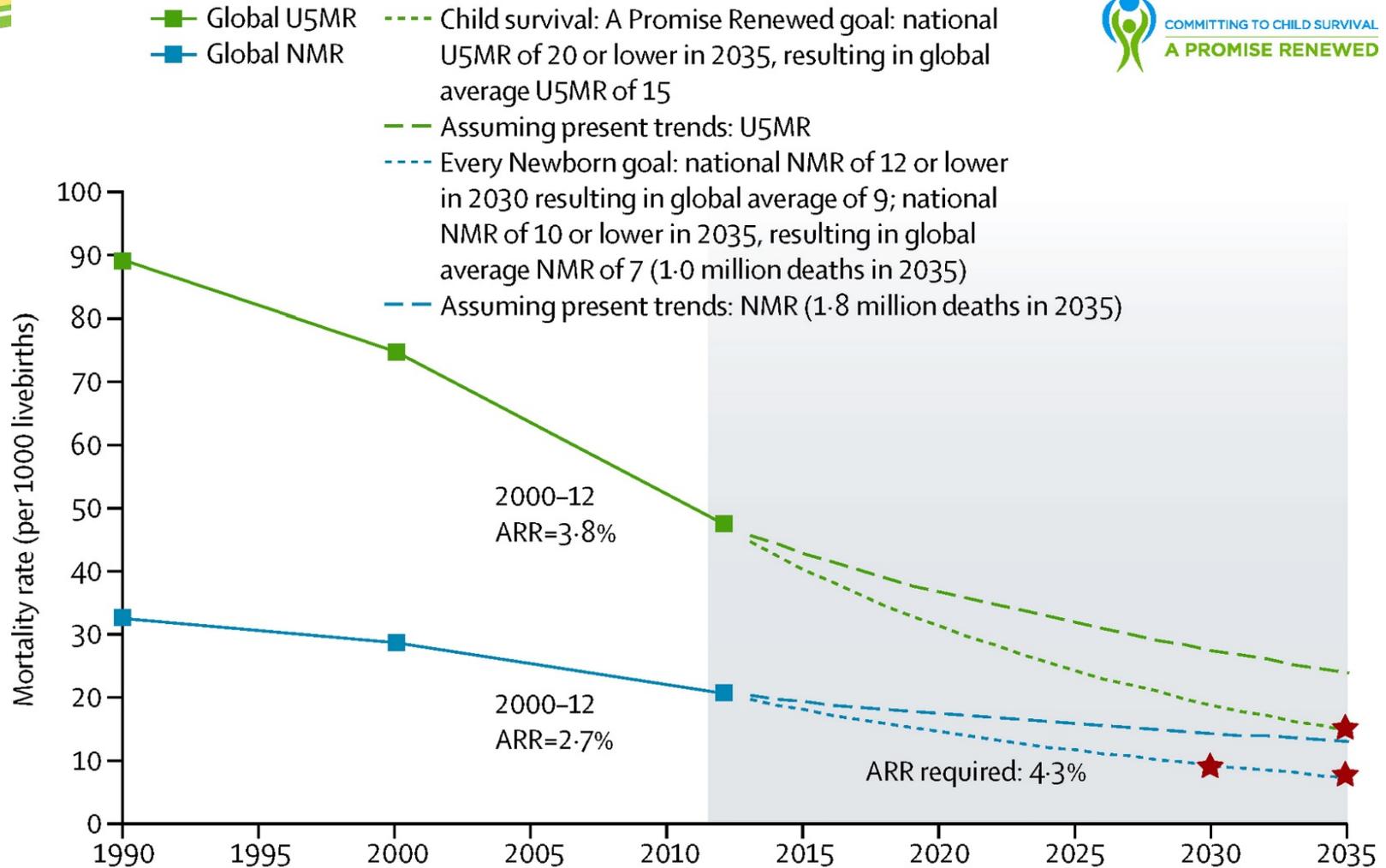
**No conflicts to declare**

Far Side May 2007



"Uh-oh."

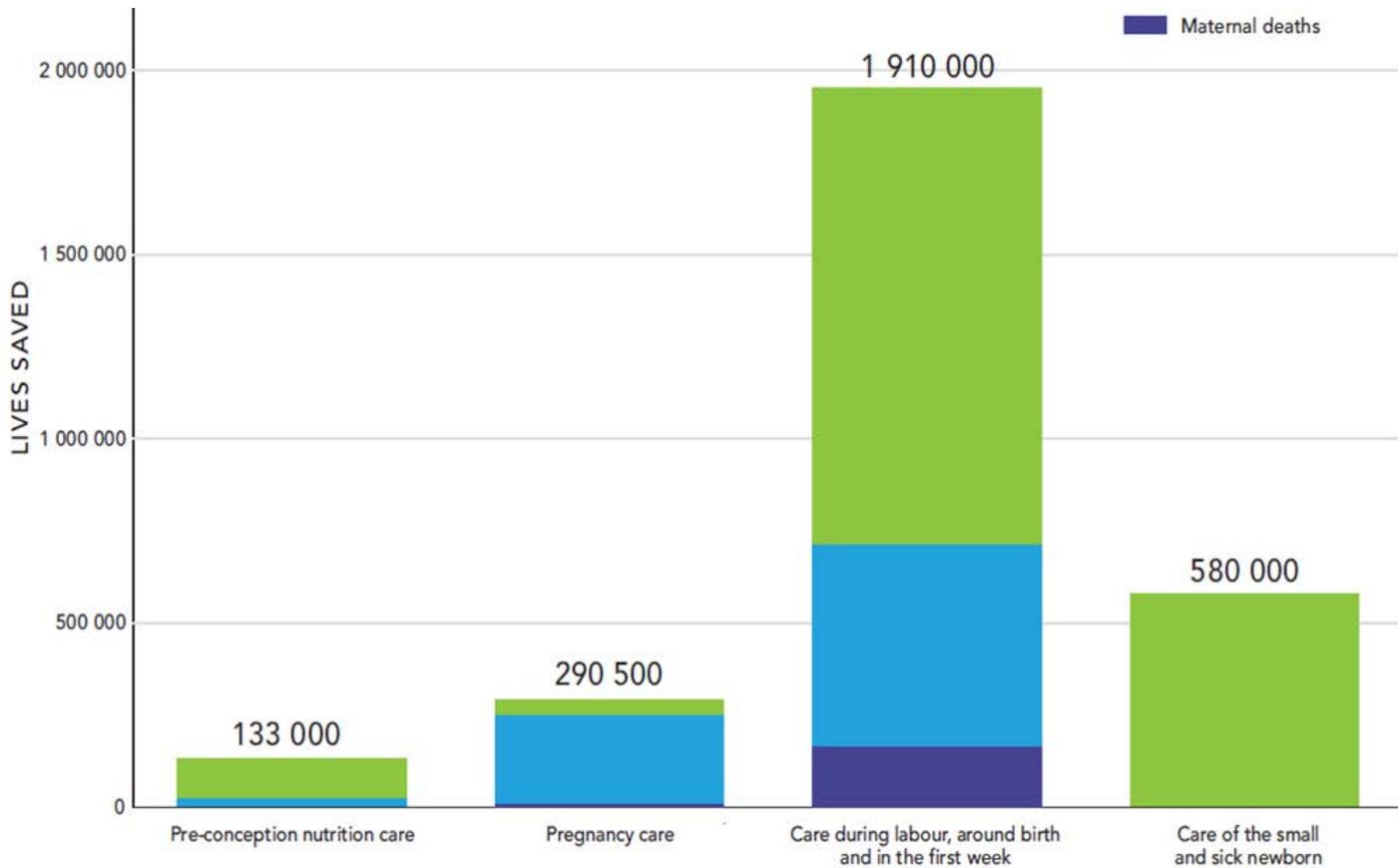






- SDG3 Reduce maternal mortality and end preventable neonatal deaths ... ..
- SDG5 Eliminate harmful practices and ensure participation of women ... ..
- SDG9 Develop sustainable infrastructure and equitable access for all ... ..
- SDG17 Effective and targeted capacity-building ... ..

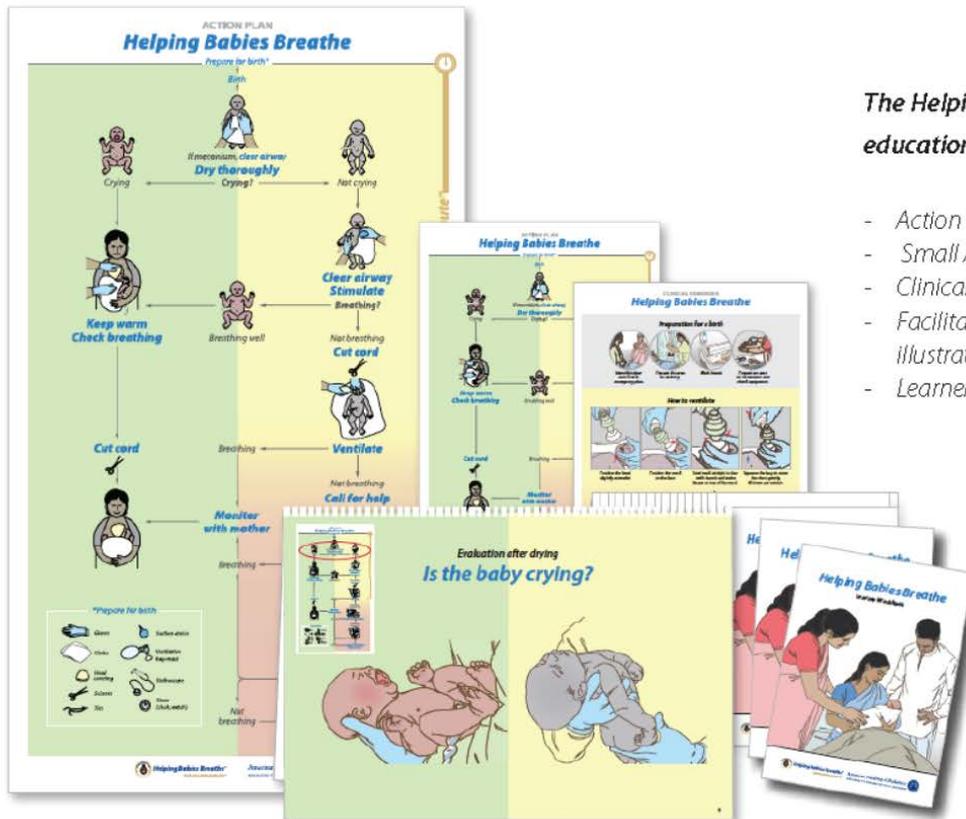
<https://sustainabledevelopment.un.org/?menu=1300>



Source: *The Lancet* Every Newborn Series, Bhutta Z et al. *Lancet*, 2014 (6).

# Helping Babies Breathe® Training Program

A neonatal resuscitation curriculum for resource limited circumstances



The Helping Babies Breathe educational material includes:

- Action Plan Wall Poster
- Small Action Plan
- Clinical Reminder
- Facilitator Flip Chart
- Illustrations
- Learner Workbooks



Contents lists available at [ScienceDirect](#)

# Resuscitation

journal homepage: [www.elsevier.com/locate/resuscitation](http://www.elsevier.com/locate/resuscitation)



Simulation and education

Frequent brief on-site simulation training and reduction in 24-h neonatal mortality—An educational intervention study<sup>☆</sup>



Estomih Mduma<sup>a,b,\*</sup>, Hege Ersdal<sup>c</sup>, Erling Svensen<sup>d</sup>, Hussein Kidanto<sup>e</sup>, Bjørn Auestad<sup>b,f</sup>, Jeffrey Perlman<sup>g</sup>

*“HBB simulation training may be associated with improved clinical behavior and performance and with a corresponding reduction in 24-h neonatal mortality”*

Mduma et al. Resuscitation 2015. Tanzania (n = approx. 9000)

RESEARCH ARTICLE

Open Access



# A pre-post study of a multi-country scale up of resuscitation training of facility birth attendants: does Helping Babies Breathe training save lives?

Roopa M. Bellad<sup>1</sup>, Akash Bang<sup>2</sup>, Waldemar A. Carlo<sup>3</sup>, Elizabeth M. McClure<sup>4</sup>, Sreelatha Meleth<sup>4</sup>, Norman Goco<sup>4</sup>, Shivaprasad S. Goudar<sup>1</sup>, Richard J. Derman<sup>5</sup>, Patricia L. Hibberd<sup>6</sup>, Archana Patel<sup>7,8</sup>, Fabian Esamai<sup>9</sup>, Sherri Bucher<sup>10</sup>, Peter Gisore<sup>9</sup>, Linda L. Wright<sup>11,12\*</sup> and for the HBB Study Group

*“Rapid scale up of HBB training of GN facility BAs was not associated with significant reductions in perinatal mortality, stillbirth, or neonatal mortality among all neonates  $\geq 1500$  g in a population-based registry in three diverse sites in India and Kenya ... .”*

Bellad et al. *BMC Pregnancy and Childbirth* 2016 (n = approx. 70,000)

RESEARCH ARTICLE

Open Access



# A pre-post study of a multi-country scale up of resuscitation training of facility birth attendants: does Helping Babies Breathe training save lives?

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*“... .. however, differential improvements in <2500 g survival in Belgaum suggest the need for careful implementation of HBB training with attention to the target population, data collection, and ongoing quality monitoring activities.”*

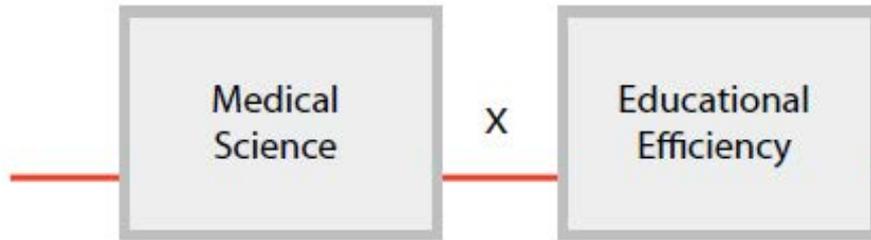
Bellad et al. *BMC Pregnancy and Childbirth* 2016 (n = approx. 70,000)

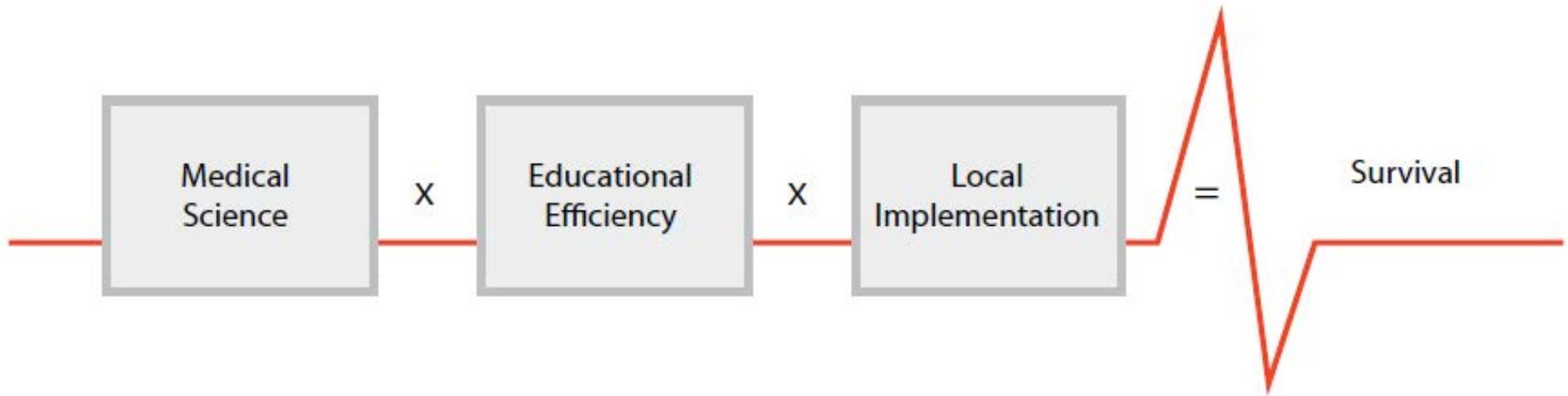
**Why are some programs more effective than others?**

**Why might interventions using **best available science and education** fail?**



Medical  
Science





Søreide E, Morrison L, Hillman K, Monsieurs K, Sunde K, Zideman D, Eisenberg M, Sterz F, Nadkarni VM, Soar J, Nolan JP; Utstein Formula for Survival Collaborators. The formula for survival in resuscitation. *Resuscitation*. 2013 Nov;84(11):1487-93.





# Improving the quality of care at a local level

What is quality care?

# Improving the quality of care at a local level

What is quality care?

**ACCESSIBLE**

**APPROPRIATE**

**EFFICIENT**

**ACCEPTABLE**

**SAFE**

**EQUITABLE**

**EFFECTIVE**

# Improving the quality of care at a local level

What is quality improvement?

# Improving the quality of care at a local level

**What is quality improvement?** It is a process that requires

- **collaboration** on a common theme/aim
- **implementation** of a targeted change
- **measurement** of the process and impact of the change

# The QI Cycle

Based on the PARIHS framework that identifies

- **evidence**
- **context** and
- **facilitation**

as key concepts

(Kitson et al. Qual Saf Health Care 2002)



# The QI Cycle

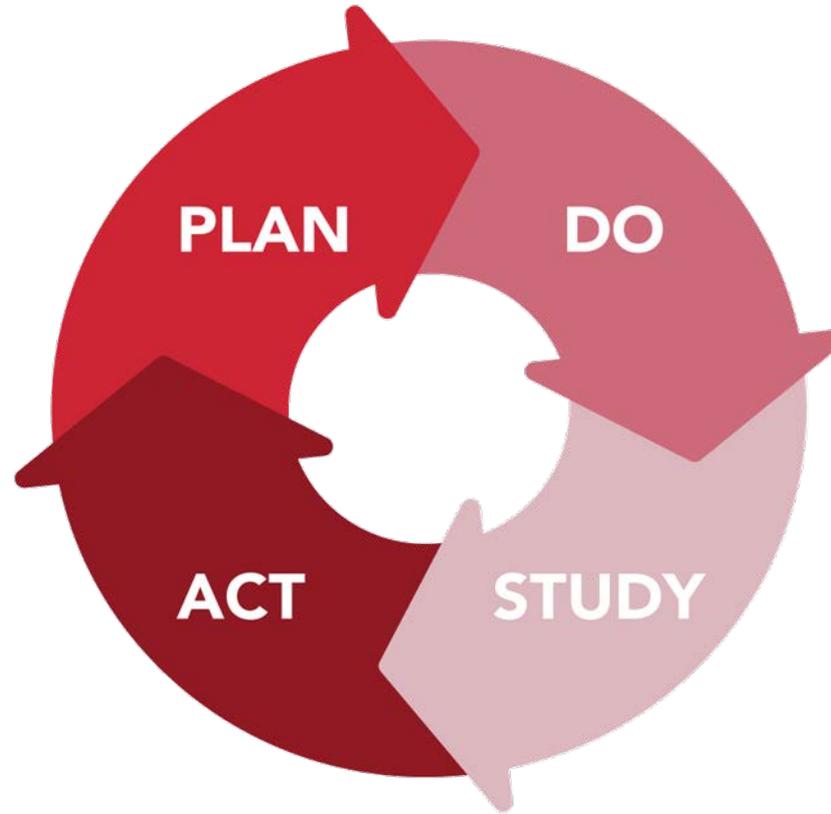


# The Plan-Do-Study-Act Cycle

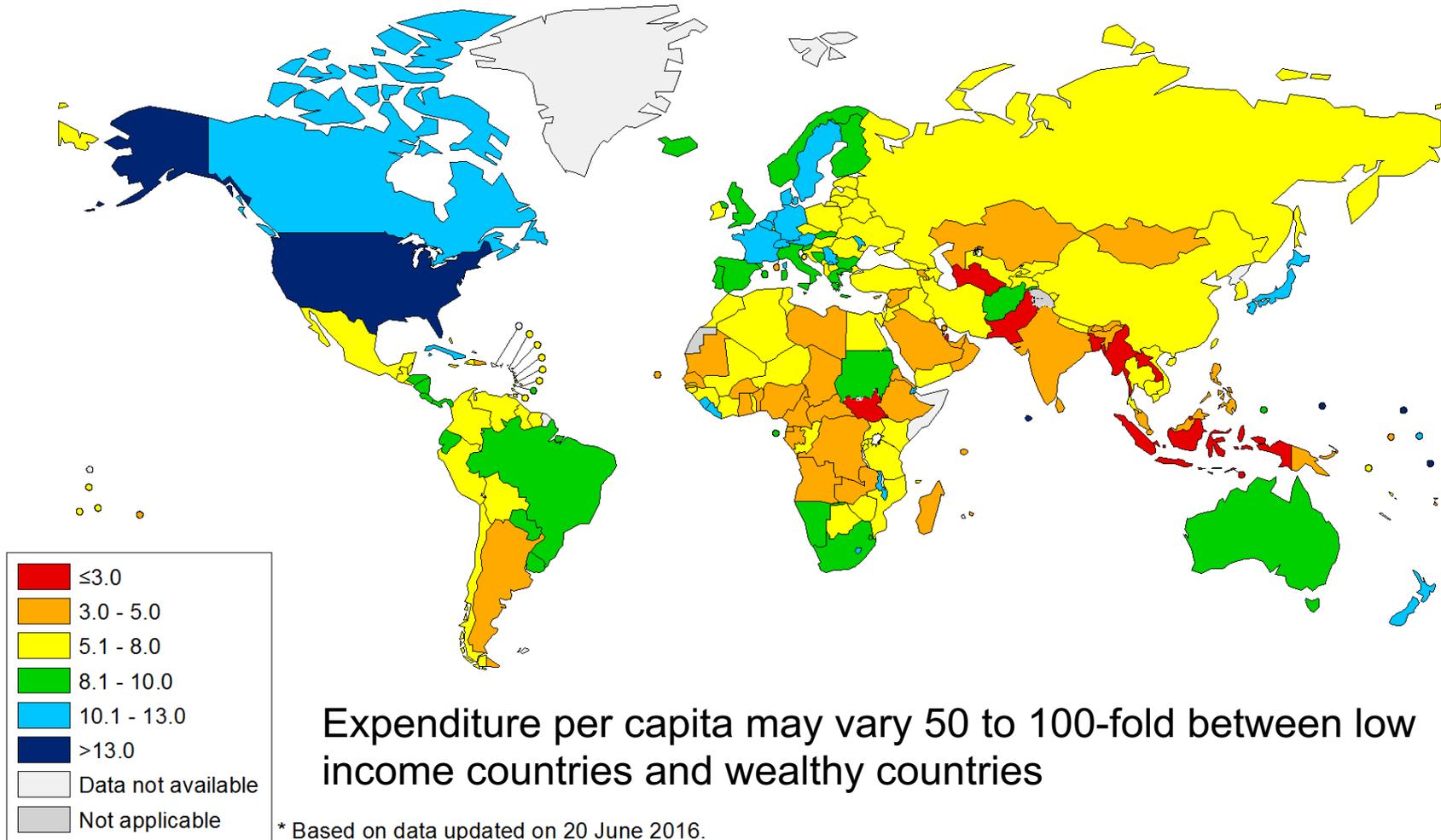
- practical
- well-established
- demonstrated effect

Derived from the “process for improvement” that included an aim, implementation & measurement

(Deming, Associates in Process Improvement)



# Total expenditure on health as a percentage of the gross domestic product, 2014 \*



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: Global Health Observatory, WHO  
Map Production: Information Evidence and Research (IER)  
World Health Organization



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**Can we have quality improvement when resources are so limited?**

**Quality improvement (QI)**

**VS**

**Quality assurance (QA)**

	<b>Quality Assurance</b>	<b>Quality Improvement</b>
<b>Motivation</b>	Measuring compliance with standards	Continuously improving processes to meet standards
<b>Means</b>	Inspection	Prevention, anticipation
<b>Attitude</b>	Required, defensive	Chosen, proactive
<b>Focus</b>	Outliers are “bad apples” Individuals	Processes and systems
<b>Scope</b>	Care provider	Client, patient care
<b>Responsibility</b>	Few	All

Adapted from HRSA, U.S. Department of Health and Human Resources.





Contents lists available at ScienceDirect

EBioMedicine

journal homepage: [www.ebiomedicine.com](http://www.ebiomedicine.com)



Original Article

## Interventions to Improve Neonatal Health and Later Survival: An Overview of Systematic Reviews



Zohra S. Lassi <sup>a,\*</sup>, Philippa F. Middleton <sup>a</sup>, Caroline Crowther <sup>a,b</sup>, Zulfiqar A. Bhutta <sup>c,d</sup>

<sup>a</sup> Australian Research Centre for Health of Women and Babies, Robinson Research Institute, School of Paediatrics and Reproductive Health, The University of Adelaide, Australia

<sup>b</sup> Liggins Institute, University of Auckland, New Zealand

<sup>c</sup> Robert Harding Chair in Global Child Health & Policy Centre for Global Child Health Hospital for Sick Children, Toronto, Canada

<sup>d</sup> Center of Excellence for Women and Child Health, The Aga Khan University, Karachi, Pakistan

### Examples of interventions

Corticosteroids for preventing neonatal respiratory distress syndrome

Skin-to-skin care and early initiation of breastfeeding

Hygienic cord care

Kangaroo mother care for preterm infants

(Lassie et al. EBioMedicine 2015)

## Example 1:

Thomassen et al. International Journal of Emergency Medicine (2015)

**Setting:** An ER in Mnazi Mmoja Hospital, Zanzibar, a tertiary hospital for 1.2 million people (average annual income US \$250)

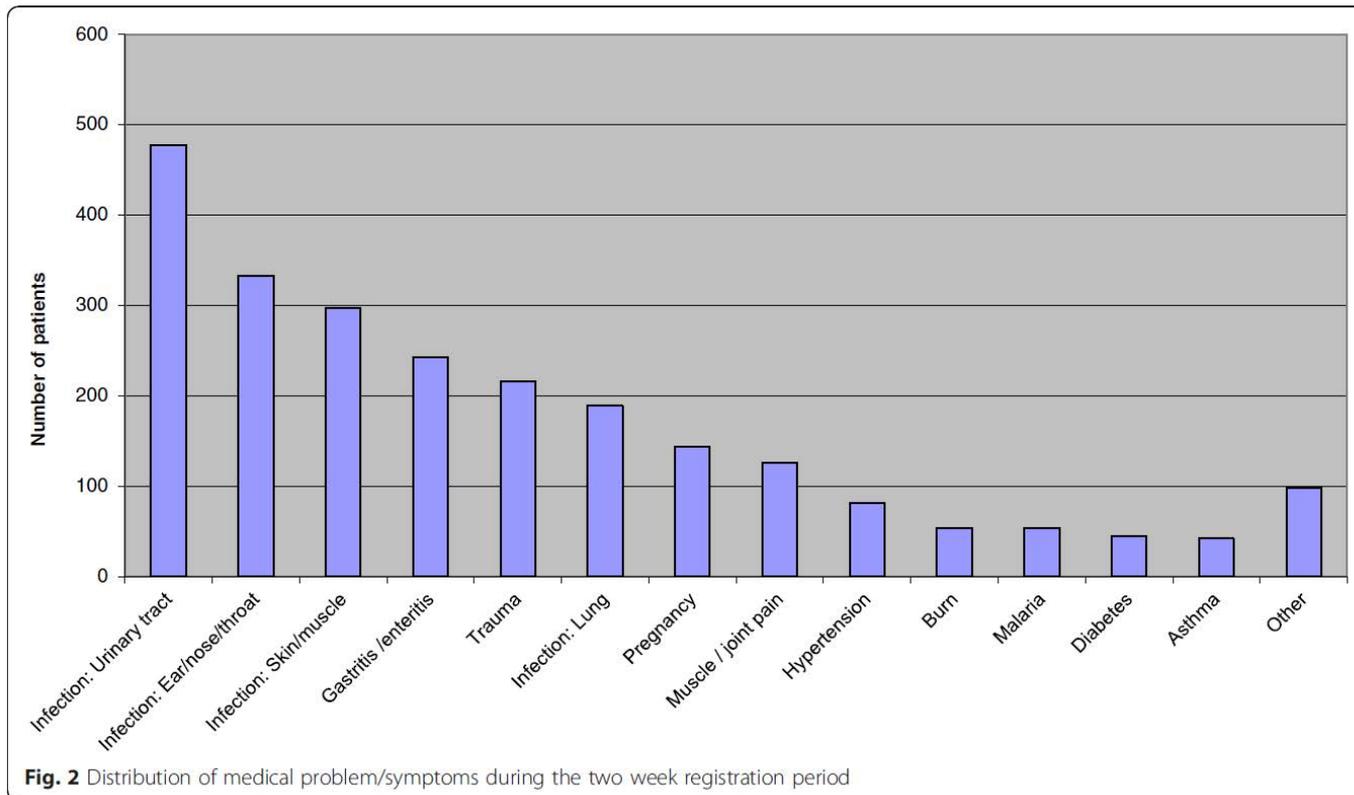
**Preconditions:** No extra funding; no extra staff, use pen & paper (no PC), stepwise approach

**Aims:** Problems were identified and stepwise changes made

1. Implement regular staff meetings
2. Register all OPD patients
3. Triage simple problems to local clinic referral

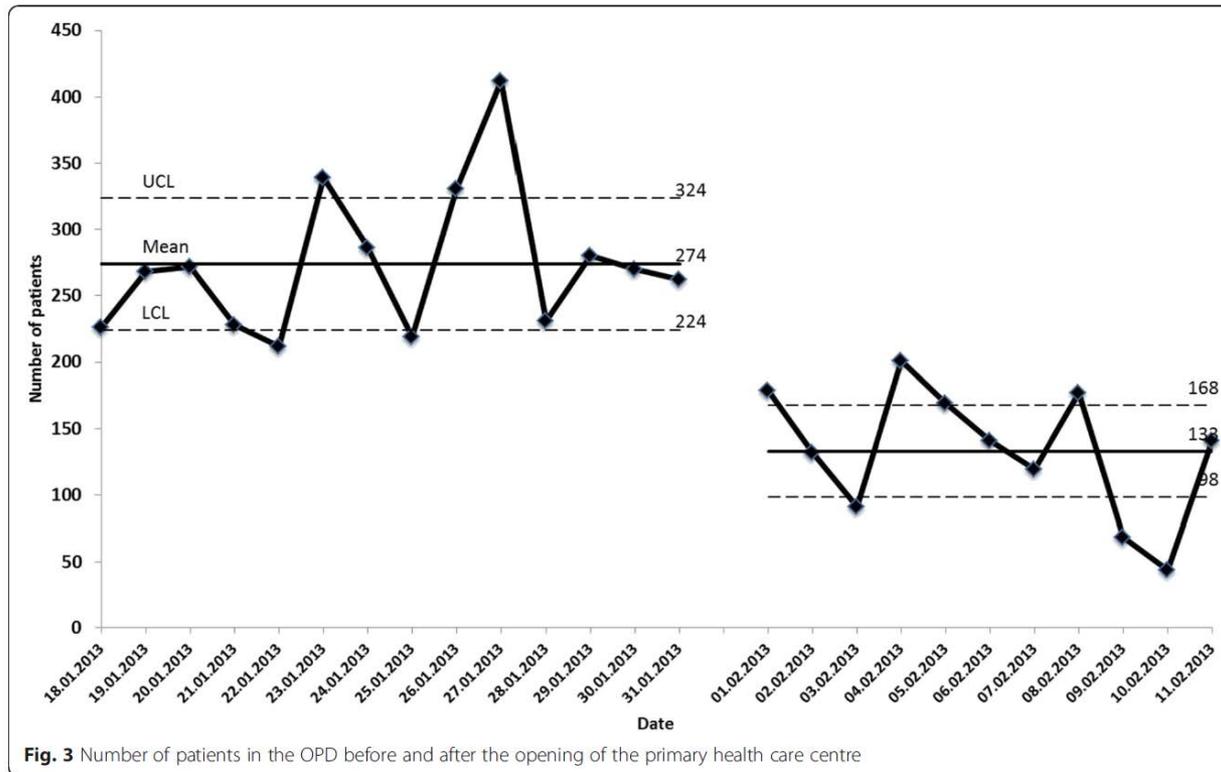
## Example 1 (continued):

**Clarify aims:** Top 3 presentations were urine, ENT, and skin infections



# Example 1 (continued):

**Measure:** Triage resulted in significant reduction in attendance



## Example 1:

Thomassen et al. International Journal of Emergency Medicine (2015)

**Outcomes:** Significant change was effected and demonstrated by

1. Clear aims
2. Targeted implementation
3. Measurement of specific outcomes

### **Highlights:**

1. Local ownership and leadership
2. Change agents
3. System perspective

## Example 2 (large scale):

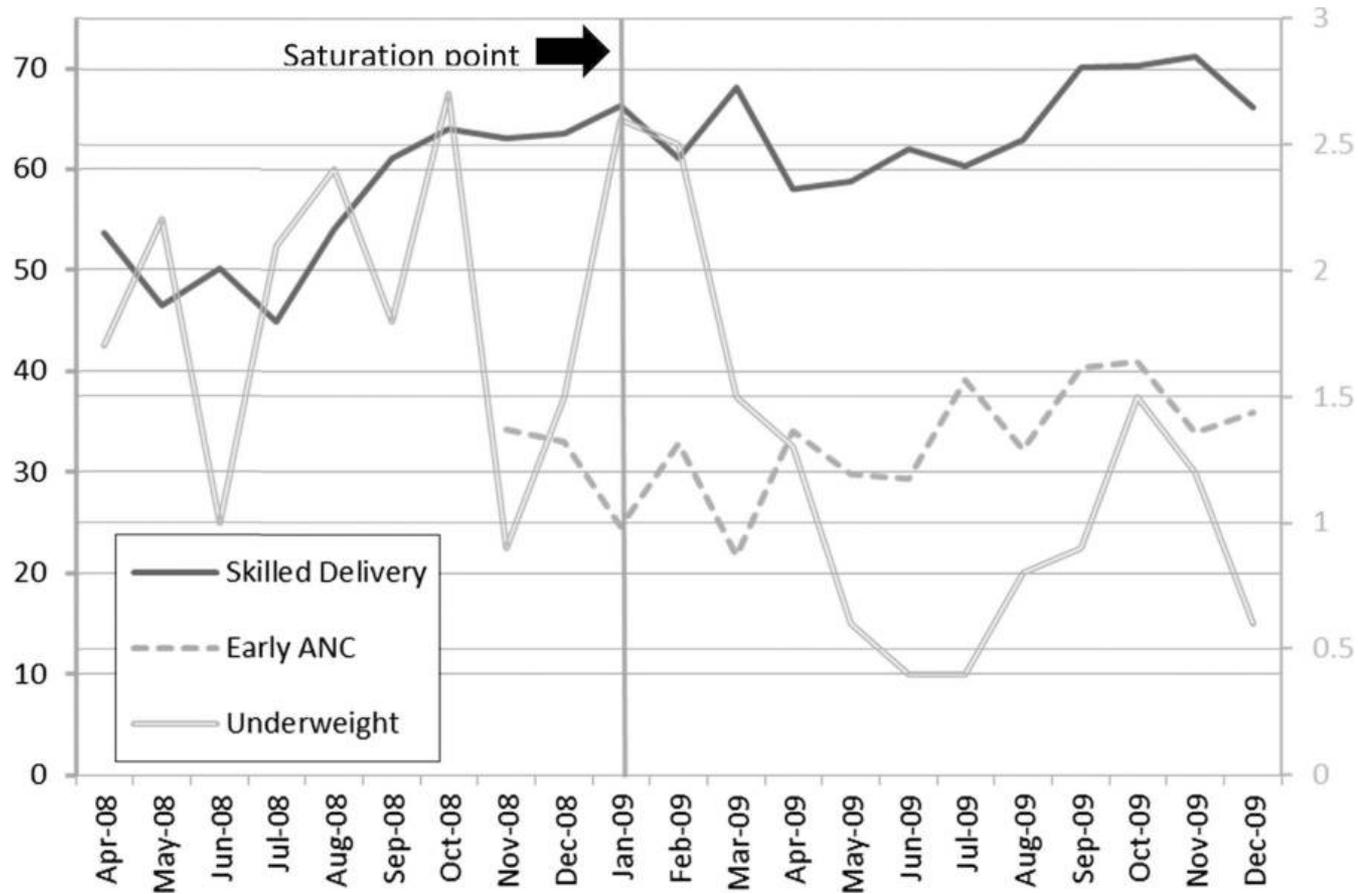
Singh et al. Int J Qual Health Care 2013

**Setting:** 27 health facilities and corresponding communities in 4 largely rural districts/dioceses in Northern Ghana

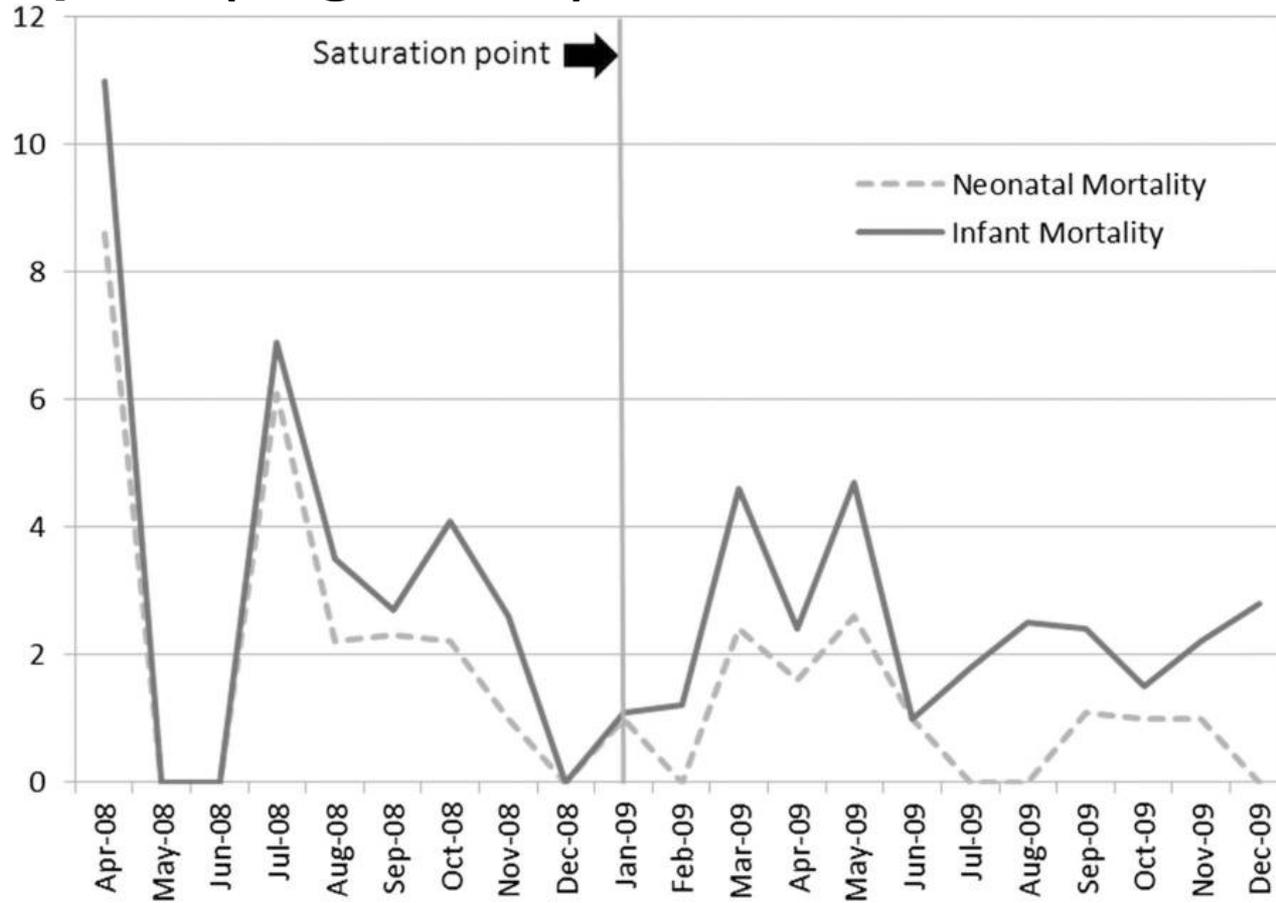
### Preconditions:

1. The model for improvement
2. Simple, low-cost change ideas
3. Each facility forms a QI team that attends structured workshops
4. Share progress with other QI teams
5. Coaching visits

## Example 2 (outcomes):



## Example 2 (large scale):



## Example 2:

Singh et al. Int J Qual Health Care 2013

**Outcomes:** Significant change was effected and demonstrated by

1. Clear aims
2. Targeted implementation
3. Measurement of specific outcomes

### **Highlights:**

1. Local ownership and leadership
2. Local training and supportive supervision
3. System perspective but facility-based interventions

## 1. Quality Training

### Senior Midwife Tutor Training Program

The curriculum for our Senior Midwife Tutor Training Program (SMTTP) was developed and implemented by midwifery and nursing professors at our major partner, Mount Royal University in Calgary. It is a four-month cycle of instruction, clinical refreshers and work in home communities designed to bolster the capacity of midwife educators from health centres and colleges in all regions of Ethiopia.

The course begins and ends with classroom work focussing on both pedagogical and clinical skills, but places high priority on putting new skills into practice, and having students share them with institutional colleagues, midwifery students and community midwives.

In the first two years starting in February 2014, instructors from Mount Royal and University of Alberta carried the lion's share of the teaching, but

## 2. Quality Systems

### Strengthening Referral Procedures



In November, 25 health professionals from Fiche Zone northwest of Addis Ababa gathered for a two-day training session in a Quality Improvement process developed by the University of Alberta project team.

## 3. Quality Institutions

### Building capacity at St. Paul's Hospital

#### MicroResearch

A course developed by colleagues at Dalhousie University is aimed at improving local research capacity.

By the end of a two-week workshop, teams of participants have formed to develop and submit formal grant applications for ethics and funding consideration.

Nineteen MicroResearch projects are currently under way.

#### Helping Babies Survive, Helping Mothers Survive and Other Courses

The project has given Helping Babies Breathe training to dozens of facilitators and providers who have taken their skills to the far reaches of Ethiopia.

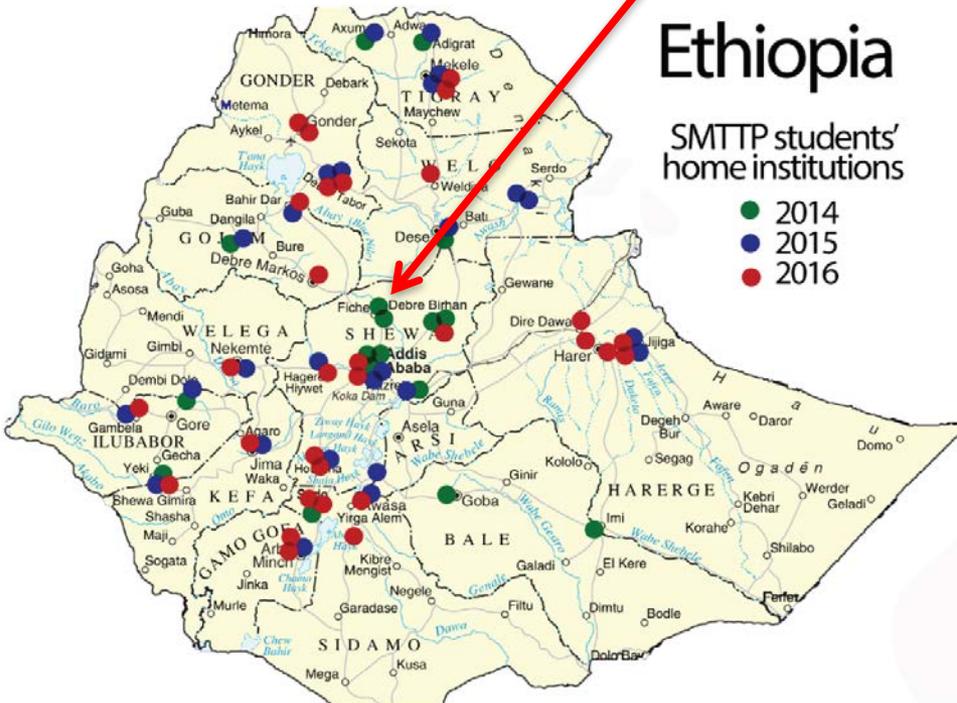
In 2016 we will institute similar training with the new Helping Babies Survive and Helping Mothers

# Partners

## Ethiopia

SMTTP students' home institutions

- 2014
- 2015
- 2016



Faculty of Health and Community Studies



Ethiopian Midwives Association

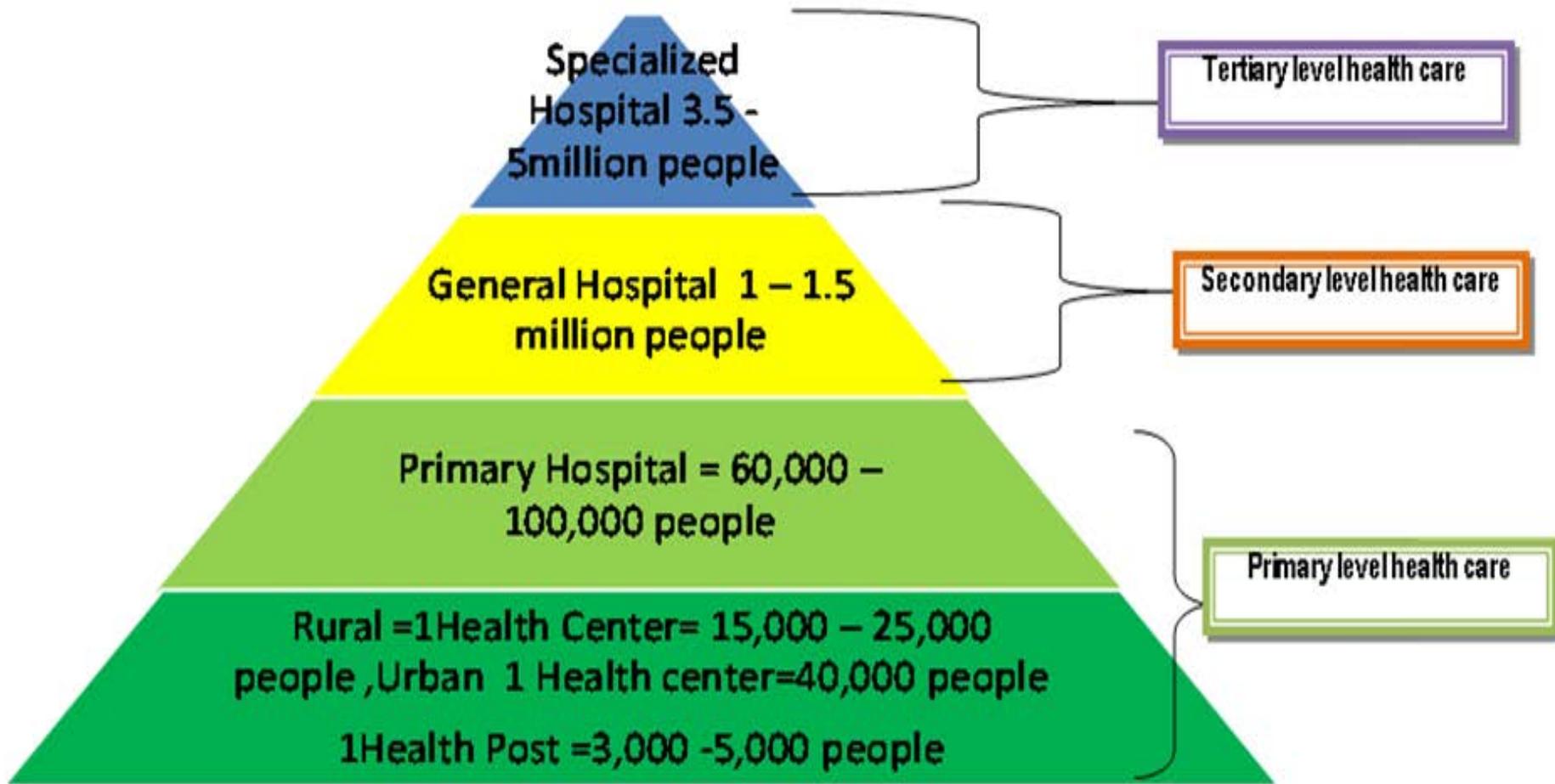
SMTTP students have come from colleges and health centres across Ethiopia. The goal is to work with at least one midwife from every such institution by the end of 2017.

Project undertaken with the financial support of:



Global Affairs Canada

Affaires mondiales Canada



## 1. Quality Training

### Senior Midwife Tutor Training Program

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1

Identify the Problem



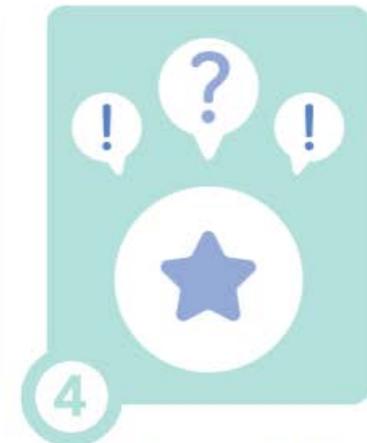
2

Select Your Team



3

Brainstorm Causes



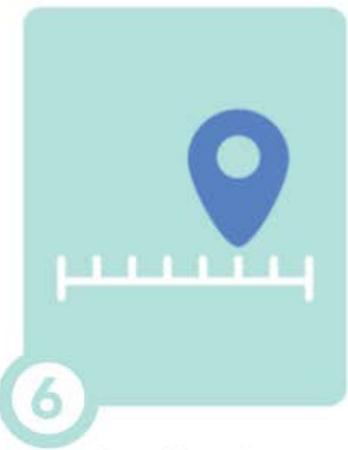
4

Choose a Priority



5

Map the Process



6

Identify Indicators



7

Explain your Aim



8

Engage Partners



9

Implement Change



10

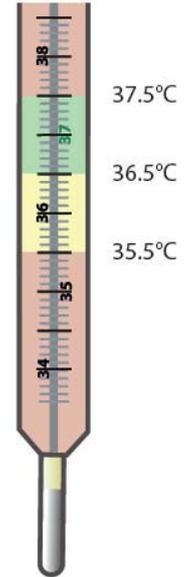
Share Knowledge

# Evidence-based Practice for Improving Quality (EPIQ)

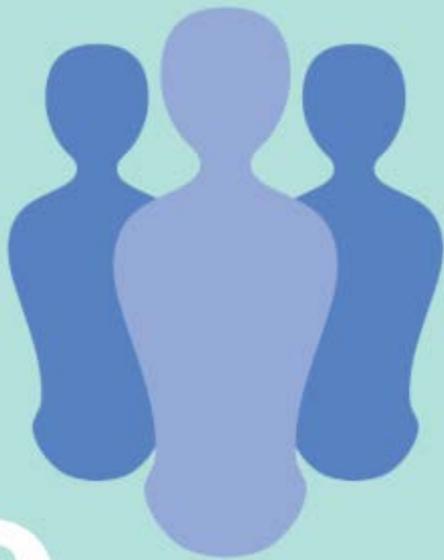


1

## Identify the Problem



(Helping Babies Survive, AAP)



2

Select Your Team



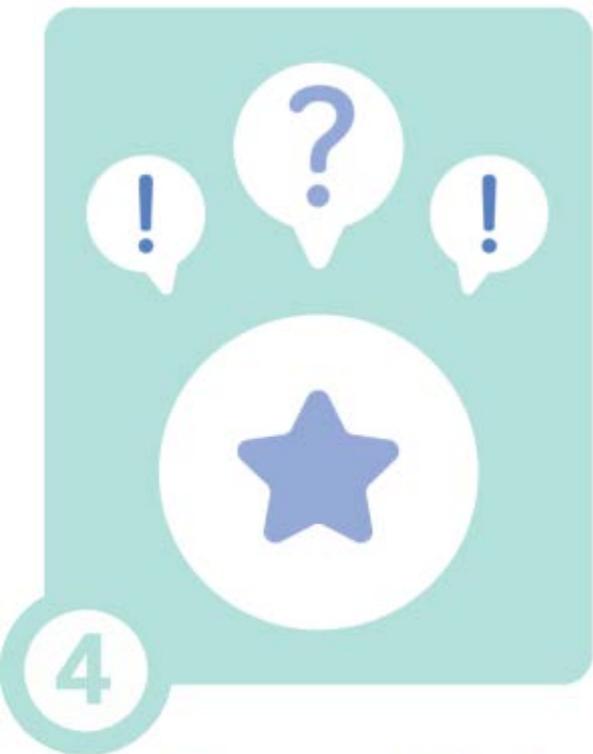


## Brainstorm Causes



(Helping Babies Survive, AAP)

Hats?  
Environment?  
Blankets?  
Skin to skin?  
Documentation?  
Training?  
Cultural practices?  
Heating?



Choose a Priority

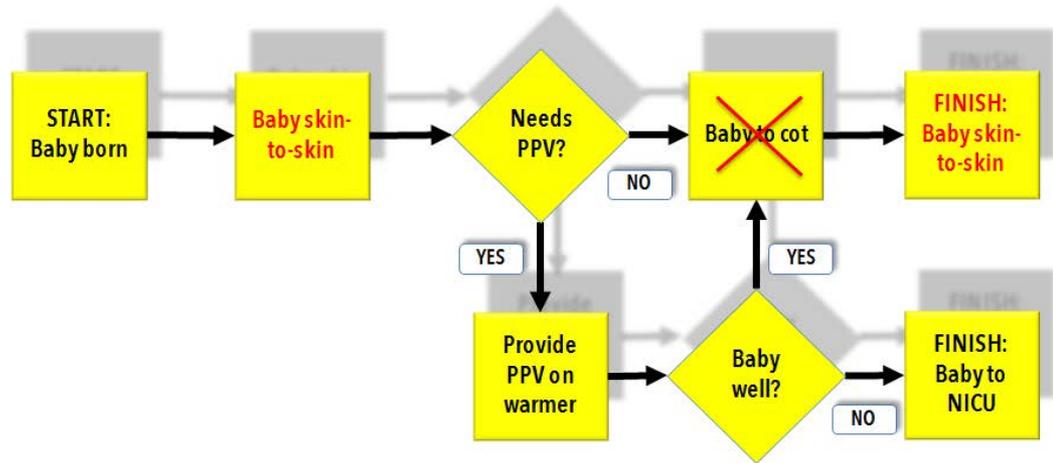


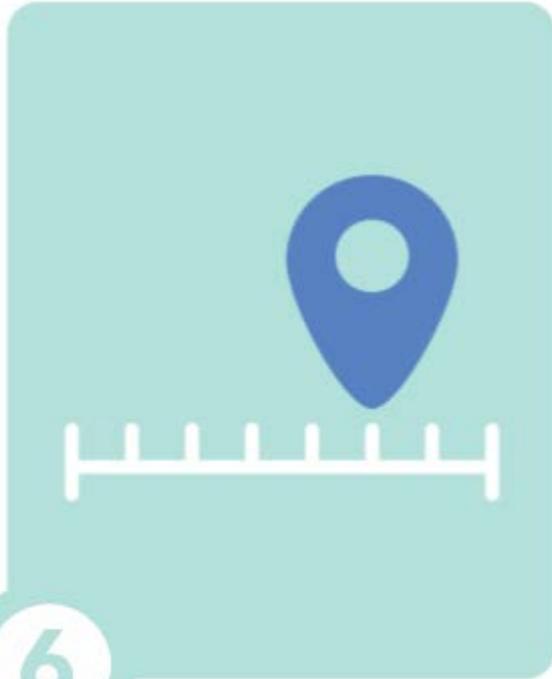
(Helping Babies Survive, AAP)



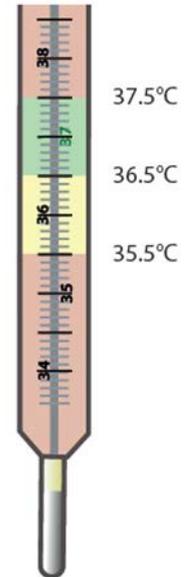
5

## Map the Process

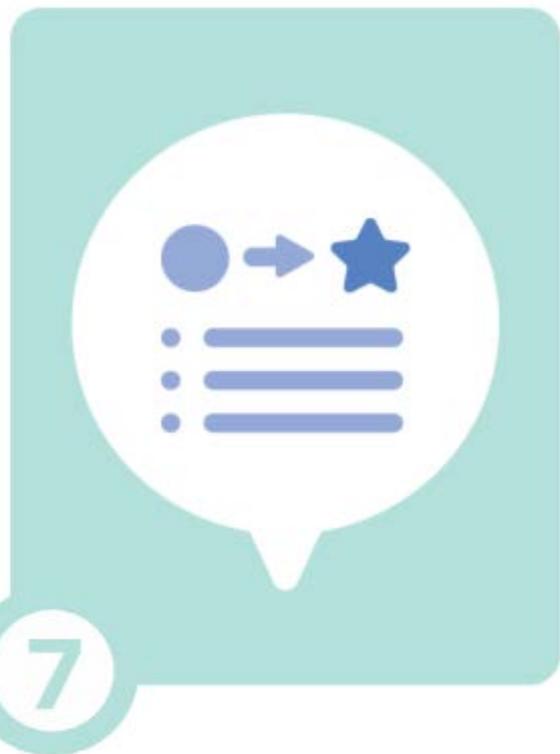




## Identify Indicators



(Helping Babies Survive, AAP)



## Explain your Aim

**EPIQ AIM FORM**

Title of Change: Skin-to-skin care  
 Team: Delivery room/NICU  
 Date Proposed: August 2016

Identify the quality domain being targeted: (select one or more)

Accessibility     Acceptability     Effectiveness     Efficiency  
 Equitability     Safety     Appropriateness

Describe the overall aim of this practice change:

We aim to Increase  
(increase/decrease/improve etc.)

the proportion  
(number/percentage/team etc.)

of well babies with normal initial temperature after delivery  
(name the exact thing to be improved)

by/from/to to 100%  
(e.g. by 50% or from 30 to 80%)

by November 2016  
(enter the month and year)

What indicators do you plan to measure:

Write down the process indicator(s): The proportion of term babies per week who are skin-to-skin prior to the first temperature check.

Write down the outcome indicator(s): The proportion of term babies per week with an initial temperature between 36.3 and 37.2 C

Why this change was selected (rationale):

Local data: About 20% of our babies are cold (<36.3 C) or overheated (>37.2 C) at initial temperature check  
(detail)

Evidence (literature, guideline, or policy): Abnormal initial temperature is associated with morbidity and prevented by skin-to-skin care  
(detail)

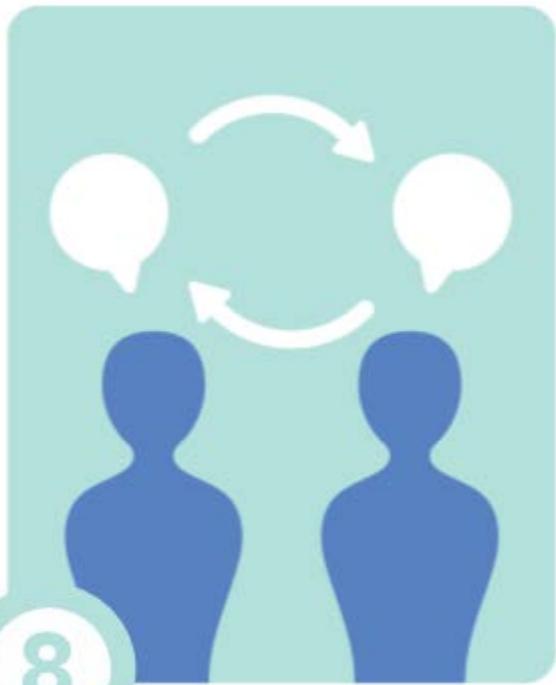
Individual or group (team):  
(detail)

Other  
(detail)

It is important to achieve this aim and address the problem because:

Quality perinatal care includes skin-to-skin for many reasons: improved bonding and breastfeeding, temperature management, infection control, and may prevent death in poorly resourced settings.

Copyright EPIQ 2016 2016-02-04



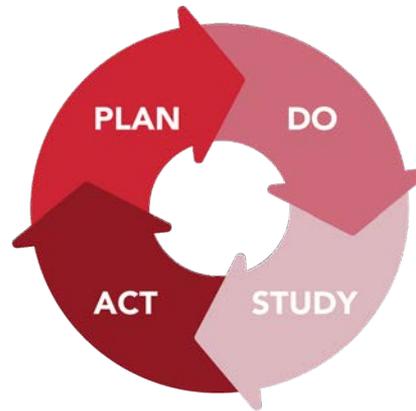
## Engage Partners



(Helping Babies Survive, AAP)



## Implement Change



**EPIQ CHANGE FORM**

Title of Change: \_\_\_\_\_  
 Team: \_\_\_\_\_  
 Date Proposed: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 E-mail: \_\_\_\_\_ Telephone: \_\_\_\_\_

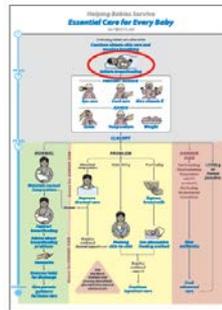
	WHAT ?	WHO ?	WHEN ?
<b>AIM</b>	What practice(s) do you want to change? <i>(e.g. eliminate delays during admission)</i>	Who is taking ownership of this (name/ designation)?	When was it decided to do this? <i>(mm/dd/yyyy)</i>
<b>PLAN</b>	What needs to be in place to do this? <i>(e.g. orientation plan, poster, training course)</i>	Who needs to be engaged (groups)? <i>(e.g. nurses, doctors)</i>	When will you start? <i>(mm/dd/yyyy)</i>
<b>DO</b>	What will you actually do that is different at the bedside/in the institution? <i>(e.g. direct admission of all at risk)</i>	Who is responsible to make this happen (name/ designation)?	When did you actually start? <i>(mm/dd/yyyy)</i>
<b>STUDY</b>	What outcome(s) are you measuring and how are you measuring it (them)? <i>(e.g. time to admission and survival)</i>	Who evaluates the outcomes (name/ designation)?	When will you complete the evaluation? <i>(mm/dd/yyyy)</i>
<b>ACT</b>	What did your results tell you to do next? <i>(e.g. focus on skin-to-skin protocol)</i>	Who needs to know (groups)?	When will you do your next PDSA? <i>(mm/dd/yyyy)</i>

Copyright EPIQ 2016 2016-04-02



## Implement Change

Charge	Discharge	Appointment	Appointment Date	Completed By	at or disc
Wiley	Wiley	Wiley	2014/08	Wiley	✓
			21/4/08		✓



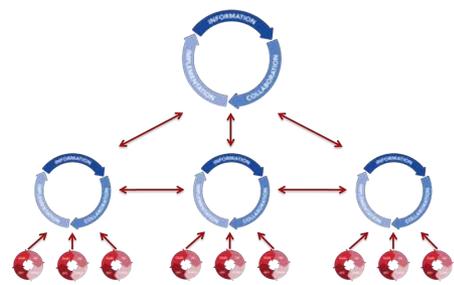
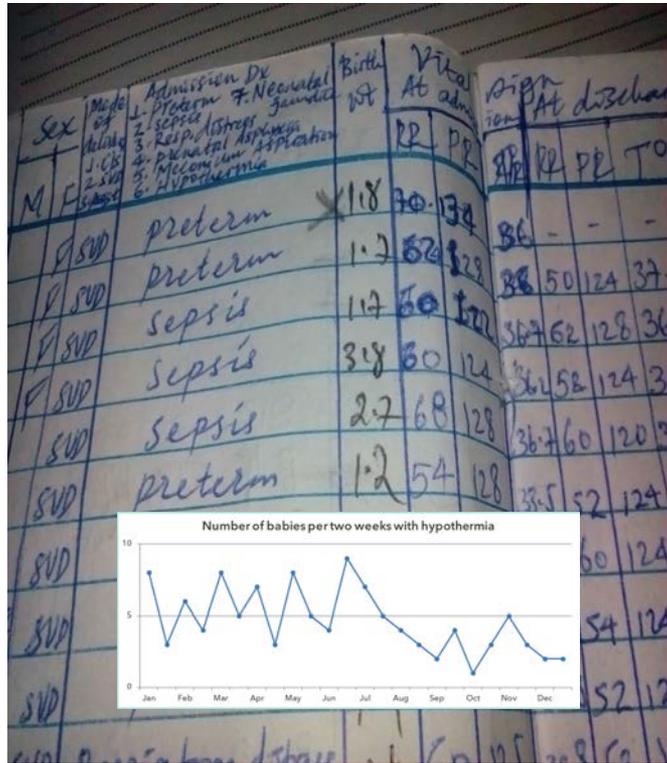
(Helping Babies Survive, AAP)





10

## Share Knowledge



 Save the Children
 


**በጤና ተቋም መውለድ የህፃንን እና የእናትን ጤንነት ያረጋግጣል!**

**No Woman Should Die While Giving Life! EVERY ONE child should survive!**

**አንድም እናት በወለድ ምክንያት ህይወቷን ማጣት የለባትም! የተወለዱ ህጻናት ሁሉ ይደጉ!**

የደ/ላ/ባ/ህ/ክ/መ/ጤና ቢሮ ከአሜሪካን ሕጻናት አድን ድርጅት ጋር በመተባበር

Healthcare

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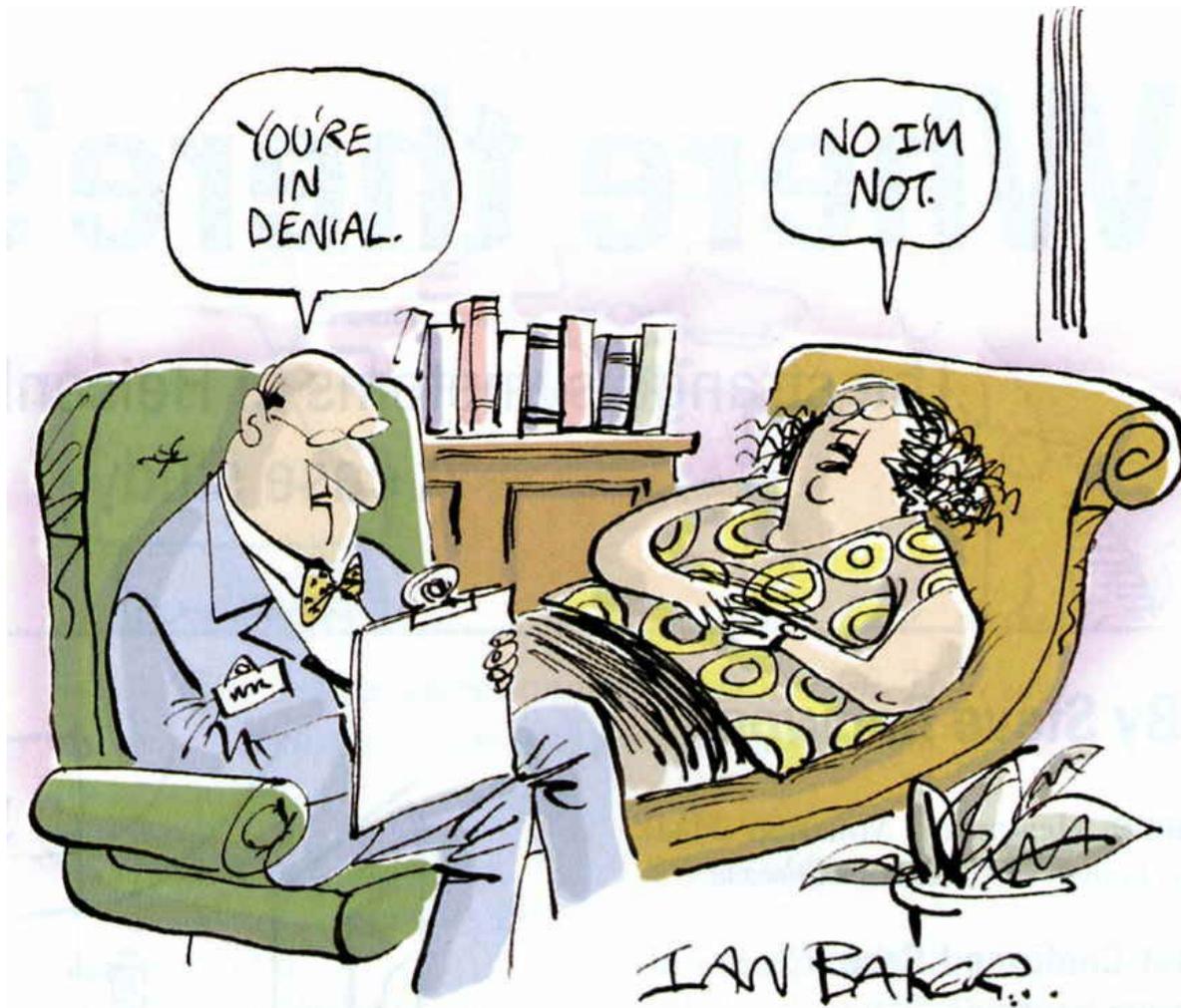
What is “quality improvement” and how can it transform healthcare?

Paul B Batalden, Frank Davidoff

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Transformation of healthcare—quality improvement

“... everyone in healthcare really has two jobs when they come to work every day: to do their work and to improve it.”





Save the Date - February 14th to 17th, 2018  
Banff Centre, Banff, Alberta

