



March 2017 – SUPPORT Summary of a systematic review

## Do skilled birth attendance and emergency obstetric care reduce stillbirths?

Some 2.6 million stillbirths occur worldwide every year, and almost all of these are in low- and middle-income countries. A significant proportion of these stillbirths take place at home, usually in the absence of a skilled birth attendant – someone with the skills needed to manage normal uncomplicated pregnancies and childbirth.

### Key messages

- **Skilled birth attendance may reduce stillbirths and perinatal mortality.**
- **It is uncertain what the effects of alternative ways of providing emergency obstetric care are on stillbirths or perinatal mortality.**



### Who is this summary for?

People deciding whether to introduce skilled birth attendance into practice

#### ! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low-income countries

#### X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

### This summary is based on the following systematic review:

Yakoob MY, Ali MA, Ali MU, et al. The effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. *BMC Public Health* 2011;11 Suppl 3:S7.

### What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

**SUPPORT** was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

**Glossary of terms used in this report:**  
[www.supportsummaries.org/glossary-of-terms](http://www.supportsummaries.org/glossary-of-terms)

**Background references on this topic:**  
See back page

# Background

Stillbirths are caused mainly by complications during labour and childbirth, such as prolonged or obstructed labour or umbilical cord accidents. Women and babies need access to appropriate healthcare to improve pregnancy and childbirth outcomes. This care should include skilled birth attendance, and access to emergency obstetric care for women experiencing complications in pregnancy, childbirth, or postpartum.

A skilled attendant is defined as “an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns”.

Basic emergency obstetric and newborn care has been defined as including seven “signal functions”: the use of intravenous/intramuscular antibiotics, intravenous/intramuscular oxytocin, intravenous/intramuscular anticonvulsants, manual removal of retained placenta and removal of retained products of conception, assisted vaginal delivery and basic newborn resuscitation. Comprehensive emergency obstetric care additionally includes cesarean section and blood transfusion.

## How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here: [www.supportsummaries.org/how-support-summaries-are-prepared/](http://www.supportsummaries.org/how-support-summaries-are-prepared/)

## Knowing what's not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

## About the systematic review underlying this summary

**Review objective:** To determine the effect of provision of skilled birth attendance as well as basic and emergency obstetric care on stillbirths

Types of	What the review authors searched for	What the review authors found
<b>Study designs &amp; Interventions</b>	Randomised and non-randomised trials; and observational studies evaluating the provision of skilled birth attendance and emergency obstetric care.	21 studies: 13 for skilled birth attendance (10 before-after or non-randomised studies and 3 observational studies) and 9 historical or ecological studies for emergency obstetric care
<b>Participants</b>	Pregnant women and newborns	Most women were from rural areas, but some were also from suburbs and mixed areas.
<b>Settings</b>	Community based settings in any country	Most skilled birth attendance studies were from low- and middle-income countries (Bangladesh, Bolivia, China, Guatemala, Indonesia, Malawi, Mexico, Mozambique, Nigeria, Papua New Guinea, Sudan, and Tanzania). Three studies were from high-income countries (Netherlands, Norway, and Sweden).
<b>Outcomes</b>	Stillbirths and perinatal mortality	Two (uncontrolled) before-after studies reported stillbirths and four reported perinatal mortality and were included in the primary analysis.

**Date of most recent search:** March 2010

**Limitations:** This is reasonably well-conducted systematic review with only minor limitations such as the incomplete reporting of the included studies' characteristics.

Yakoob MY, Ali MA, Ali MU, et al. The effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. BMC Public Health 2011;11 Suppl 3:S7.

# Summary of findings

## 1) Skilled birth attendance

13 studies were included, focusing mainly on training or retraining of staff. Only one controlled before–after study and three uncontrolled before–after studies reported the specific effects of the training and supervision of skilled birth attendants.

→ **Skilled birth attendance may reduce stillbirths and perinatal mortality. The certainty of this evidence is low.**

### About the certainty of the evidence (GRADE) \*

⊕⊕⊕⊕

**High:** This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different† is low.

⊕⊕⊕○

**Moderate:** This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate.

⊕⊕○○

**Low:** This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† is high.

⊕○○○

**Very low:** This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different† is very high.

\* This is sometimes referred to as ‘quality of evidence’ or ‘confidence in the estimate’.

† Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Skilled birth attendance			
<b>People</b>	Pregnant women and newborns		
<b>Settings</b>	Community based		
<b>Intervention</b>	Skilled birth attendance by ‘village midwives’ with 1 year of training (Sudan) and professional midwives (Bangladesh) [for stillbirth outcome] and in addition by trained TBAs and midwives (Indonesia) and professional providers (China) [for perinatal mortality outcome]		
<b>Comparison</b>	Usual care		
Outcomes	Relative risk reduction (95% confidence interval)	Certainty of the evidence (GRADE)	Comments
<b>Stillbirths</b>	23% (15 to 31%)	⊕⊕○○ Low	Based on data from 2 uncontrolled before–after studies. The data from the studies that could not be pooled showed consistent results
<b>Perinatal mortality</b>	12% (5 to 18%)	⊕⊕○○ Low	Based on data from 3 uncontrolled before–after studies and 1 controlled before–after study. The data from the studies that could not be pooled showed consistent results
GRADE: GRADE Working Group grades of evidence (see above and last page)			

## 2) Provision of emergency obstetric care

The review found little evidence of the effects of alternative ways of providing emergency obstetric care.

- **It is uncertain what the effects of alternative ways of providing emergency obstetric care are on stillbirths or perinatal mortality. The certainty of this evidence is very low.**

# Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
APPLICABILITY	
→ Most studies were conducted in rural areas of low- and middle-income countries during the last 30 years.	▷ These findings may be applicable to other low-income countries, but the absolute effects of skilled birth attendance and emergency obstetric care will depend on baseline levels of stillbirths and perinatal mortality. Where these baseline levels are high, higher absolute effects can be anticipated. However, good access to these services are needed to optimize these benefits.
EQUITY	
→ Most studies included low-income and disadvantaged populations but no data were reported regarding differential effects of the interventions for disadvantaged populations.	▷ The beneficial effects of interventions are expected to be larger for underserved populations, therefore reducing inequalities.
ECONOMIC CONSIDERATIONS	
→ The systematic review did not address economic considerations.	▷ Scaling up skilled birth attendance and access to emergency obstetric care will require considerable resources, particularly in more rural settings. However, the benefits of this may be substantial.
MONITORING & EVALUATION	
→ The certainty of the available evidence is low or very low.	▷ Delivering skilled birth attendance and proper emergency obstetric care are moral imperatives. However, rigorous studies to determine the magnitude of the benefits and the cost-effectiveness of different delivery options are needed.

\*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: [www.supportsummaries.org/methods](http://www.supportsummaries.org/methods)

# Additional information

## Related literature

**These systematic reviews provide consistent findings and helpful complementary considerations:**

Goldenberg RL, McClure EM, Bann CM. The relationship of intrapartum and antepartum stillbirth rates to measures of obstetric care in developed and developing countries. *Acta Obstet Gynecol Scand* 2007; 86:1303-9.

Darmstadt GL, Lee AC, Cousens S, et al. 60 Million non-facility births: who can deliver in community settings to reduce intrapartum-related deaths? *Int J Gynaecol Obstet* 2009; 107(Suppl 1):S89-112.

McClure EM, Goldenberg RL, Bann CM: Maternal mortality, stillbirth and measures of obstetric care in developing and developed countries. *Int J Gynaecol Obstet* 2007; 96:139-46.

**This report provides data on the coverage of skilled birth attendance across different countries:**

World Health Statistics 2013. World Health Organization, 2013. Available at: [http://www.who.int/gho/publications/world\\_health\\_statistics/EN\\_WHS2013\\_Full.pdf](http://www.who.int/gho/publications/world_health_statistics/EN_WHS2013_Full.pdf)

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## Conflict of interest

None declared. For details, see: [www.supportsummaries.org/coi](http://www.supportsummaries.org/coi)

## Acknowledgements

This summary has been peer reviewed by: David Yondo and Mohammad Yakoob.

## This review should be cited as

Yakoob MY, Ali MA, Ali MU, et al. The effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. *BMC Public Health* 2011;11 Suppl 3:S7.

## The summary should be cited as

Ciapponi A, Do skilled birth attendance and emergency obstetric care prevent stillbirths? A SUPPORT Summary of a systematic review. March 2017. [www.supportsummaries.org](http://www.supportsummaries.org)

## About certainty of the evidence (GRADE)

The “certainty of the evidence” is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By “substantially different” we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

**For more information about GRADE:** [www.supportsummaries.org/grade](http://www.supportsummaries.org/grade)

## SUPPORT collaborators:

**The Cochrane Effective Practice and Organisation of Care Group (EPOC)** is part of the [Cochrane Collaboration](http://www.cochrane.org). The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries. [www.epocoslo.cochrane.org](http://www.epocoslo.cochrane.org)

**The Evidence-Informed Policy Network (EVIPONet)** is an initiative to promote the use of health research in policymaking in low- and middle-income countries. [www.evipnet.org](http://www.evipnet.org)

**The Alliance for Health Policy and Systems Research (HPSR)** is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. [www.who.int/alliance-hpsr](http://www.who.int/alliance-hpsr)

**Norad**, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. [www.norad.no](http://www.norad.no)

**The Effective Health Care Research Consortium** is an international partnership that prepares Cochrane reviews relevant to low-income countries. [www.evidence4health.org](http://www.evidence4health.org)

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