August 2008 – SUPPORT Summary of a systematic review

Does training traditional birth attendants improve health behaviours and pregnancy outcomes?

A traditional birth attendant (TBA) is a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or through an apprenticeship to other TBAs. TBAs are found widely in low and middle-income countries. Although the proportion of births assisted by TBAs varies widely within a given country and across countries, it is estimated that they assist an average 24% of all births in these settings.

Key messages

- **It is unclear how providing additional training to TBAs impacts on maternal mortality**
- **There is some evidence that providing additional training to TBAs may reduce perinatal and neonatal deaths and stillbirths**
- **There is mixed evidence of the impacts of additional TBA training on:**
  - maternal morbidity, including from haemorrhage; puerperal sepsis; and obstructed labour;
  - advice-giving regarding infant feeding;
  - the referral of mothers with complications of pregnancy and childbirth.
- **Factors that should be considered when assessing whether this evidence is likely to be transferable to other settings include:**
  - if there is an existing network of TBAs that can be targeted for further training and provided with support;
  - acceptance of non-professional providers within the formal health system;
  - cultural norms and values regarding pregnancy, childbirth and child rearing;
  - local causes of maternal and perinatal ill-health and death;
  - women's ability to access health care.

Who is this summary for?

People making decisions concerning the use of traditional birth attendants to assist mothers during childbirth.

This summary includes:

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

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:

Sibley LM, Sipe TA, Brown CM, Diallo MM, McNatt K, Habarta N. Traditional birth attendant training for improving health behaviours and pregnancy outcomes. Cochrane Database of Systematic Reviews 2007, Issue 3.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

Glossary of terms used in this report:
www.supportsummaries.org/glossary

Background references on this topic:
See back page

Background

A traditional birth attendant (TBA) is a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or through an apprenticeship to other TBAs. TBAs are found widely in low and middle-income countries and it is estimated that they may assist at up to 25% of all births in these settings.

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- and middle-income countries. The methods used to assess the quality of the review and to make judgements about its relevance are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A good quality review might not find any studies from low- and middle-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.

About the systematic review underlying this summary

Review objective: To assess the effects of additional training for traditional birth attendants (TBAs) on TBA and maternal behaviours thought to mediate positive pregnancy outcomes, as well as on maternal, perinatal, and newborn mortality and morbidity

	What the review authors searched for	What the review authors found
Interventions	Randomized and quasi-randomized controlled trials (including cluster-randomized trials); interrupted time series studies; and controlled before/after studies of TBA training.	1 cluster-randomized controlled trial; 2 randomized controlled trials; and 1 controlled before/after study In two studies, training covered the management of normal deliveries and the referral of complications while in the remaining studies training focused on breastfeeding promotion. Duration of training was two to three days. Controls received no additional training.
Participants	TBAs: a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or through an apprenticeship to other TBAs. Mothers and neonates cared for by trained and untrained TBAs or those who are living in areas where such TBAs attend a majority of births.	The TBAs were poorly described in the included studies. The TBAs were approximately 30 years of age, on average, and had low levels of education. Marital and socio-economic status was generally not reported.
Settings	Rural communities	Studies from rural communities in low-income countries: Bangladesh (1), Guatemala (1), Malawi (1), and Pakistan (1)
Outcomes	TBA or maternal behaviours thought to mediate positive pregnancy outcomes; maternal mortality; perinatal and neonatal mortality.	Most studies reported multiple outcomes and many did not specify a primary outcome.

Date of most recent search: June 2006

Limitations: This is a good quality systematic review with only minor limitations.

Sibley LM, Sipe TA, Brown CM, Diallo MM, McNatt K, Habarta N. Traditional birth attendant training for improving health behaviours and pregnancy outcomes. Cochrane Database of Systematic Reviews 2007, Issue 3.

Summary of findings

The review included four studies, all conducted in low and middle-income countries in South America (Guatemala), Africa (Malawi) and Asia (Bangladesh and Pakistan).

In two studies, TBAs were given training in the management of normal deliveries and the timely detection and referral of women with obstetric complications as part of a broader package of interventions, including improvements in facility-based care. In the other two studies, TBAs were given training in breastfeeding and weaning techniques.

Each of the studies reported several outcomes related to TBA or maternal behaviours thought to mediate positive pregnancy outcomes; maternal mortality; perinatal and neonatal mortality. The only outcomes reported in all four studies were referral and perinatal death. The studies were of moderate to low quality.

1) Maternal mortality

One study of moderate quality measured maternal mortality. The study found a non-significant difference in favour of women living in areas in which TBAs had received training.

➔ **The impacts on maternal mortality of training TBAs are unclear.**

About quality of evidence (GRADE)

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

For more information, see last page.

Maternal mortality

Patients or population: Pregnant women
Settings: Rural communities in Pakistan
Intervention: Training of TBAs; delivery kits; training of lay health workers to support TBAs; improved referral
Comparison: TBAs who had not received additional training

Outcomes	Comparative risks*		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Without TBA training	**With TBA training**				
Maternal mortality	**4 per 1000**	**3 per 1000** (2 to 5)	RR **0.74** (0.45 to 1.22)	19,525 (1 study)	⊕⊕⊕◯ Moderate	Women were followed until 42 days post-partum.

CI: Confidence interval RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

2) Maternal morbidity

Two studies measured maternal morbidity. One study measured three maternal morbidity outcomes (frequency of obstructed labour; frequency of haemorrhage [antepartum, intrapartum and post-partum combined]; and frequency of puerperal sepsis) while another measured two outcomes (frequency of post-partum haemorrhage and mean volume of blood loss). The results show a mixed picture. TBA training appeared to reduce the frequency of any haemorrhage and of puerperal sepsis among women in the intervention areas. However, the frequency of obstructed labour was higher in the intervention areas and TBA training appeared to have no effect on post-partum haemorrhage and mean blood loss among women studied.

➔ **There is mixed evidence of low quality on the impacts of TBA training on the frequency of haemorrhage; puerperal sepsis; and obstructed labour among pregnant women.**

Maternal morbidity

Patients or population: Pregnant women
Settings: Rural communities in Pakistan and Malawi
Intervention: Training of TBAs; delivery kits; training of lay health workers to support TBAs; improved referral
Comparison: TBAs who had not received additional training

Outcomes	Comparative risks*		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Without TBA training	**With TBA training**				
Frequency of obstructed labour	**50 per 1000**	**62 per 1000** (51 to 75)	RR **1.24** (1.03 to 1.5)	19,525 (1 study)	⊕⊕◯◯ Low	Frequency of obstructed labour
Frequency of haemorrhage (antepartum, intrapartum and postpartum combined)	**28 per 1000**	**17 per 1000** (13 to 22)	RR **0.62** (0.48 to 0.79)	19,525 (1 study)	⊕⊕◯◯ Low	Frequency of haemorrhage (antepartum, intrapartum and postpartum combined)
Frequency of postpartum haemorrhage	**84 per 1000**	**79 per 1000** (66 to 97)	RR **0.94** (0.78 to 1.15)	4,227 (1 study)	⊕⊕◯◯ Low	Frequency of postpartum haemorrhage
Mean blood loss (ml)	The mean blood loss in the control group was 256 ml	**2 ml more** (7 ml less to 11 ml more)	-	4,227 (1 study)	⊕⊕◯◯ Low	Mean blood loss (ml)
Frequency of puerperal sepsis	**42 per 1000**	**8 per 1000** (5 to 10)	RR **0.18** (0.13 to 0.24)	19,525 (1 study)	⊕⊕◯◯ Low	Frequency of puerperal sepsis

CI: Confidence interval RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

3) Perinatal and neonatal mortality

Two studies assessed perinatal and neonatal mortality. One study, comparing TBAs who had received additional training to untrained TBAs, measured 3 outcomes (perinatal deaths, stillbirths, neonatal deaths) and showed that TBA training reduced perinatal and neonatal mortality. A second study, comparing additional TBA training with basic training, suggested that additional TBA training had no effect on perinatal mortality.

➔ **There is low to moderate quality evidence that TBA training may reduce perinatal and neonatal deaths and stillbirths.**

Perinatal and neonatal mortality

Patients or population: Pregnant women and their children
Settings: Rural communities in Pakistan
Intervention: Training of TBAs; delivery kits; training of lay health workers to support TBAs; improved referral
Comparison: TBAs who had not received additional training

Outcomes	Comparative risks*		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)
	Without TBA training	**With TBA training**			
Perinatal death	**120 per 1000**	**88 per 1000** (74 to 102)	RR 0.73 (0.62 to 0.85)	18,699 (1 study)	⊕⊕⊕◯ Moderate
Stillbirth	**71 per 1000**	**50 per 1000** (42 to 60)	RR 0.71 (0.59 to 0.84)	18,699 (1 study)	⊕⊕⊕◯ Moderate
Neonatal death	**39 per 1000**	**28 per 1000** (24 to 32)	OR 0.71 (0.61 to 0.82)	18,699 (1 study)	⊕⊕⊕◯ Moderate

CI: Confidence interval RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

4) TBA or maternal behaviours thought to mediate positive pregnancy

Three studies examined TBA or maternal behaviours thought to mediate positive pregnancy. One study comparing additional TBA training to basic training, measured outcomes related to infant feeding and showed that additional TBA training did not increase advice about immediate feeding of colostrum but did increase advice about the introduction of complementary foods. In a second study TBA training increased referral rates for complications of pregnancy and childbirth. A third study found little or no impact on correct identification and timely referral for malpresentation, prolonged labour and preterm labour.

- ➔ **There are mixed findings of moderate quality on the effects of additional TBA training on improving advice giving regarding infant feeding.**
- ➔ **There are mixed findings of very low quality regarding the impacts of TBA training on the appropriate referral of mothers with complications of pregnancy and childbirth.**

TBA or maternal behaviours thought to mediate positive pregnancy

Patients or population: Pregnant women and TBAs
Settings: Rural communities in Bangladesh, Guatemala and Pakistan
Intervention: Training of TBAs; delivery kits; training of lay health workers to support TBAs; improved referral
Comparison: TBAs who had not received additional training

Outcomes	Comparative risks*		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Without TBA training	**With TBA training**				
Advice about immediate feeding of colostrum	**795 per 1000**	**843 per 1000** (708 to 922)	RR 1.06 (0.89 to 1.16)	165 (1 study)	⊕⊕⊕◯ Moderate	
Frequency of referral	**70 per 1000**	**102 per 1000** (82 to 125)	RR 1.45 (1.17 to 1.79)	19,525 (1 study)	⊕⊕⊕◯ Moderate	
Timely referral for mal-presentation, prolonged labour, preterm labour	**442 per 1000**	**463 per 1000** (363 to 568)	OR 1.09 (0.72 to 1.66)	358 (1 study)	⊕◯◯◯ Very low	Study used a controlled before-after design

CI: Confidence interval RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

Relevance of the review for low- and middle-income countries

➔ Findings	▷ Interpretation*
APPLICABILITY	
➔ **All of the studies were conducted in low income countries and their findings should be applicable to similar settings where access to care for pregnancy and childbirth is poor.**	▷ *Factors that need to be considered to assess whether the intervention effects are likely to be transferable to other settings include:* *– an existing network of active TBAs that can be targeted for further training;* *– the proportion of all births conducted by TBAs;* *– the scale up of skilled birth attendants and the promotion of institutional delivery in the setting;* *– referral access to improved health services;* *– resources to provide clinical and managerial support for TBAs;* *– acceptance of non-professional providers within the formal health system;* *– cultural norms and values regarding pregnancy, childbirth and child rearing;* *– local causes of maternal and perinatal ill-health and death women's ability to access health care.*
EQUITY	
➔ **The included studies were all conducted in rural communities in low-income countries but provided little data on the socio-economic status of the participants or on the differential effects of the interventions on disadvantaged populations.**	▷ *TBA training may have potential to reduce inequalities in health experienced by disadvantaged populations through facilitating timely referral of pregnant women where improved health services are available. However, further evidence on these impacts is required.*
ECONOMIC CONSIDERATIONS	
➔ **The review did not report any cost or cost-effectiveness data.**	▷ *Where such data are not available, further primary studies may be needed to inform decision-making.*
➔ **The findings summarised here are based largely on randomised trials in which the levels of organization and support were potentially higher than those available in routine settings.**	▷ *Providing adequate support to programmes may be important to intervention effectiveness when scaling up.*
MONITORING & EVALUATION	
➔ **High quality evidence of the effects of TBA training is not yet available for a range of important health outcomes.**	▷ *If TBA training programmes are implemented, it should be in the context of robust evaluation. This should include evaluation of costs and of the process of implementing such programmes.*
➔ **In several of the studies, the reliability of outcome measures was unclear.**	▷ *Valid, reliable and inexpensive methods are needed to measure pregnancy and childbirth outcomes in response to community-based TBA training interventions.*

*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- and middle-income countries. For additional details about how these judgements were made see: www.supportsummaries.org/methods

Additional information

Related literature

Lehmann U, Sanders D. Community health workers: what do we know about them? The state of the evidence on programmes, activities, costs and impact of health outcomes of using community health workers. World Health Organization, 2007.

Walt G. Community health workers in national programmes: just another pair of hands? Milton Keynes: Open University Press, 1990.

Lewin SA, Dick J, Pond P, Zwarenstein M, Aja G, van Wyk B, Bosch-Capblanch X, Patrick M. Lay health workers in primary and community health care. The Cochrane Database of Systematic Reviews 2005, Issue 1. Art. No.: CD004015. DOI:10.1002/14651858.CD004015.pub2.

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Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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Keywords

evidence-informed health policy, evidence-based, systematic review, health systems research, health care, low and middle-income countries, developing countries, primary health care.

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The South African Medical research Council aims to improve the South Africa's health and quality of life through promoting and conducting relevant and responsive health research. www.mrc.ac.za/

The South African Cochrane Centre, the only centre of the international Cochrane Collaboration in Africa, aims to ensure that health care decision making in Africa is informed by high quality, timely and relevant research evidence. www.mrc.ac.za/cochrane/cochrane.htm

About quality of evidence (GRADE)

The quality of the evidence is a judgement about the extent to which we can be confident that the estimates of effect are correct. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), five factors that can lower confidence in an estimate of effect (risk of bias, inconsistency of the results across studies, indirectness, imprecision of the overall estimate across studies, and publication bias), and three factors that can increase confidence (a large effect, a dose response relationship, and plausible confounding that would increase confidence in an estimate). For each outcome, the quality 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

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is a Collaborative Review Group of the Cochrane Collaboration: an international organisation that aims to help people make well informed decisions about health care by preparing, maintaining and ensuring the accessibility of systematic reviews of the effects of health care interventions. www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking. Focusing on low- and middle-income countries, EVIPNet promotes partnerships at the country level between policy-makers, researchers and civil society in order to facilitate both policy development and policy implementation through the use of the best scientific evidence available. www.evipnet.org

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration aiming to promote the generation and use of health policy and systems research as a means to improve the health systems of developing countries. www.who.int/alliance-hpsr

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