



September 2009 – SUPPORT Summary of a systematic review

Does critical incident audit and feedback improve perinatal and maternal mortality and morbidity?

Audit and feedback of critical incidents has become an established part of obstetric practice in many settings. Longitudinal data in some settings has suggested that the practice may improve maternal and perinatal mortality. This review sought to establish whether there is evidence of an effect on maternal and perinatal mortality, or any potential harmful effects and costs. Critical incidents refer to mortality and severe morbidity. The authors searched for randomised controlled trials of “any summary of clinical performance over a specified period of time” and “method of feeding that information back to the clinicians”, that reported objectively measured professional practice in a healthcare setting or healthcare outcomes.

Key messages

- **There are currently no randomised controlled trials that assess the effect of audit and feedback of critical incidents on perinatal and maternal mortality and morbidity.**
- **Observational serial data suggest that critical incident audit and feedback could result in more benefit than harm. Therefore, maternal and perinatal death reviews should continue to be held, until further information is available.**
- **Good quality studies are required to evaluate the effectiveness of different feedback mechanisms to clinicians. Such studies should also include economic evaluations of critical incident audit and feedback systems.**



Who is this summary for?

People making decisions about maternal and infant care.

! 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

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:

Pattinson RC, Say L, Makin JD, Bastos MH. Critical incident audit and feedback to improve perinatal and maternal mortality and morbidity. Cochrane Database of Systematic Reviews 2005, Issue 4. Art. No.: CD002961. DOI: 10.1002/14651858.CD002961.pub2.

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.support-collaboration.org/summaries/explanations.htm

Background references on this topic: See back page.

Background

Audits of maternal and perinatal mortality are commonly undertaken to establish numbers of deaths, causes of deaths, and potential modifiable factors. Longitudinal data from the UK suggests that such maternal mortality audits have contributed to a decline in maternal mortality in the UK over several decades. Serial data from Mozambique have also shown audit and feedback to have a significant positive impact on intrapartum foetal mortality and perinatal mortality (Bugalho 1993). However, other countries which routinely report maternal and perinatal mortality have not experienced similar improvements in outcomes.

A systematic review of the effects of audit and feedback on professional practice found that audit and feedback can be effective in improving professional practice (Jamvedt 2006). The effects were typically small to moderate (a 4% median increase in compliance with desired practice for audit and feedback alone).

This summary is based on a systematic review published in 2005 by Pattinson and colleagues, which sought to assess the evidence of the effectiveness of critical incident audit and feedback in improving maternal and perinatal mortality and morbidity.

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.support-collaboration.org/summaries/methods.htm

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 whether critical incident audit and feedback improves maternal and perinatal mortality and morbidity.

	What the review authors searched for	What the review authors found
Interventions	RCTs of audit and feedback of maternal and perinatal morbidity and mortality	No trials were identified which met the review's inclusion criteria.
Participants	Maternity units	None
Settings	Not specified	None
Outcomes	Primary outcomes: Perinatal mortality and morbidity rates Maternal mortality and morbidity rates	None

Date of most recent search: January 2005

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

Pattinson RC, Say L, Makin JD, Bastos MH. Critical incident audit and feedback to improve perinatal and maternal mortality and morbidity. *Cochrane Database of Systematic Reviews* 2005, Issue 4. Art. No.: CD002961. DOI: 10.1002/14651858.CD002961.pub2.

Summary of findings

The review did not find randomised controlled trials that assessed the effect of critical incident audit and feedback on perinatal mortality rate, maternal mortality ratio, or severe neonatal and maternal morbidity.

The authors of the review argue that collecting data to monitor perinatal and maternal mortality is vital, and that evidence from serial data suggests more benefit than harm.

Randomised controlled trials are required to evaluate the effectiveness of feedback mechanism to clinicians and other people, and the inclusion of data on suboptimal care. Such studies should also include economic evaluations of critical incident audit and feedback systems.

About the quality of evidence (GRADE)



High: Further research is very unlikely to change our confidence in the estimate of effect.



Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.



Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.



Very low: We are very uncertain about the estimate.

For more information, see last page

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

→ Findings	▷ Interpretation*
APPLICABILITY	
→ No data were available for any country (low, middle or high-income).	▷ <i>The collection and use of maternal and perinatal morbidity and mortality data is important in all settings. However, it is uncertain whether, and what type of, feedback to clinicians is effective, and whether including indicators of suboptimal care results in improvements in morbidity and mortality.</i>
EQUITY	
→ No data were provided. Critical incident audits have been used in high-income countries such as the UK over a relatively long period. The review does not however indicate whether it has promoted equity in such settings.	▷ <i>Critical incident audit and feedback can be implemented in most health care settings with sufficient clinical and data management capacity. However, a lack of resources to address system constraints which may underly suboptimal care could limit its effectiveness in resource constrained settings.</i>
ECONOMIC CONSIDERATIONS	
→ No data were available.	▷ <i>There will be financial and human resource requirements associated with collecting additional data, and ensuring feedback to clinicians and other service providers. The effectiveness as well as the cost-effectiveness of critical incident audit and feedback should be assessed.</i>
MONITORING & EVALUATION	
→ No data were available.	▷ <i>A critical incident audit is a form of monitoring and evaluation. However, the use of critical incident audit and feedback should include indicators to assess its impact and costs. Ideally, this should be done in the context of randomised trials.</i>

*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: <http://www.support-collaboration.org/summaries/methods.htm>

Additional information

Related literature

Jamtvedt G, Young JM, Kristoffersen DT, Thomson O'Brien MA, Oxman AD. Audit and feedback: effects on professional practice and health care outcomes. *The Cochrane Database of Systematic Reviews* 2006, Issue 2.

Flottorp S. Does providing healthcare professionals with data about their performance improve their practice?

A SUPPORT Summary of a systematic review. August 2008. <http://www.support-collaboration.org/summaries.htm>

Perinatal Education Program. Unit 49 maternal and perinatal mortality audits. Available at: http://pepcourse.co.za/index.php?option=com_content&task=view&id=42&Itemid=32

Mcfarlane A, Mugford M, Henderson J, Furtado A, Stevens J, Dunn A. *Birth Counts: statistics of pregnancy and childbirth*. Norwich, United Kingdom: The Stationery Office, 2000.

Bugalho A, Bergström S. Value of perinatal audit in obstetric care in the developing world: a ten-year experience of the Maputo model. *Gynecol Obstet Invest* 1993;36(4):239-43.

Saving Mothers – Report on Confidential Enquiries into Maternal Deaths in South Africa

<http://www.doh.gov.za/docs/index.html>

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Conflict of interest

None declared. For details, see: www.support-collaboration.org/summaries/coi.htm

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Keywords

All Summaries: evidence-informed health policy, evidence-based, systematic review, health systems research, health care, low- and middle-income countries, developing countries, primary health care, audit and feedback, maternal mortality, maternal morbidity, perinatal mortality, perinatal morbidity.

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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), the risk of bias, the consistency of the results across studies, and the precision of the overall estimate across studies. 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.support-collaboration.org/summaries/grade.htm

SUPPORT collaborators:

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

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

For more information:

www.support-collaboration.org

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