



January 2017– SUPPORT Summary of a systematic review

Are abortion procedures by nondoctor providers effective and safe?

Training midlevel providers (midwives, nurses, and other nondoctor providers) to conduct surgical aspiration abortions and manage medical abortions has been proposed as a way of increasing women's access to safe abortion in developing countries. It is important to know if abortion procedures administered by midlevel providers are more or less effective and safe than those administered by doctors.

Key messages

- Surgical aspiration abortion procedures administered by midlevel providers probably lead to little or no difference in incomplete and failed abortions, compared to doctors.
- Surgical aspiration abortion procedures administered by midlevel providers probably lead to slightly more complications, compared to doctors.
- Medical abortion procedures administered by midlevel providers probably lead to slightly less incomplete and failed abortions, compared to doctors.
- Factors that need to be considered when assessing the transferability of the findings to a low-income setting include the availability of doctors to perform abortion procedures, the availability and training of midlevel providers to perform surgical and medical abortions and the abortion rates and incidence of unsafe abortion procedures.



Who is this summary for?

People making decisions concerning the use of midlevel service providers to administer effective and safe abortion procedures

! 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:

Ngo TD, Park MH, Free C. Safety and effectiveness of termination services performed by doctors versus midlevel providers: a systematic review and analysis. *Int J Women Health* 2013; 5: 9–17.

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

Background references on this topic:
See back page

Background

Unsafe abortion remains a major public health concern in developing countries. Abortions are conventionally administered by trained doctors (gynecologists and obstetricians). In many low-income countries, even in settings where abortion is legal, access to abortion remains limited due to a shortage of trained doctors. Irrespective of legal conditions, in settings where access to safe abortion care is lacking, women often obtain abortions from unqualified or unskilled providers. Therefore, training and authorising midlevel providers (midwives, nurses, and other nondoctor providers) to conduct aspiration abortions and manage medical abortions has been proposed as a way to increase women's access to safe abortion services.

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/

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 compare the effectiveness and safety of abortion procedures administered by midlevel providers versus procedures administered by doctors

	What the review authors searched for	What the review authors found
Interventions	Randomised trials, non-randomised trials and comparison studies exploring effectiveness or safety of abortion procedures (surgical or medical) provided by midlevel providers and doctors	Five studies: Randomised trials (2) – one exploring surgical aspiration procedures and the other medical abortion procedures; Prospective cohort studies (3) – all exploring surgical aspiration abortion procedures
Participants	Women seeking termination of pregnancy	Total of 8539 women seeking termination of pregnancy; women aged from <20 to >40 years. In the four studies of surgical abortion procedures, maximum gestational ages ranged from 10 to 16+ weeks. In the trial of medical abortion, women with gestational ages of up to 9 weeks were included.
Settings	Any setting	South Africa and Vietnam (1); Nepal (1); US (2) and India (1). All studies took place in either a hospital or specialist health clinic, such as a women's health centre or sexual and reproductive health clinic.
Outcomes	Effectiveness or efficacy of abortion procedures, provided by midlevel providers versus doctors, measured as <i>incomplete or failed abortion</i> . Safety of abortion procedures administered by midlevel providers versus doctors, measured as <i>adverse events and complications</i> .	Both randomised trials and two of the cohort studies examined effectiveness, measured as <i>incomplete or failed abortion</i> . The trial of surgical abortion and the three cohort studies examined safety, measured as complications (immediate and delayed).
Date of most recent search: February 2012		
Limitations: This is a well-conducted review with minor limitations.		

Ngo TD, Park MH, Free C. Safety and effectiveness of termination services performed by doctors versus midlevel providers: a systematic review and analysis. *Int J Women Health* 2013; 5; 9–17.

Summary of findings

A total of five studies were included in this review. Four studies, one in Vietnam and South Africa, two in the US and one in India, examined surgical aspiration abortion by midlevel providers compared to doctors. These studies looked at effectiveness of abortion procedures, measured as incomplete or failed abortion, and at safety of abortion procedures, measured as complications related to the procedure. The other study was done in Nepal and examined medical abortion by midlevel providers compared to doctors. This study also looked at effectiveness of abortion procedures, measured as incomplete or failed abortion.

1) Surgical aspiration abortion procedures administered by midlevel providers compared to doctors

Five studies examined this comparison but only the findings from two randomised trials are displayed in the table below. Two additional studies with low certainty of evidence also suggested more incomplete or failed abortions by midlevel providers. Three additional studies with low certainty of evidence suggested little or no difference in complications between midlevel providers and doctors.

- ➔ **Surgical aspiration abortion administered by midlevel providers probably leads to little or no difference in incomplete and failed abortions. The certainty of this evidence is moderate.**
- ➔ **Surgical aspiration abortion administered by midlevel providers probably leads to slightly more complications. The certainty of this evidence is moderate.**

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.

Surgical aspiration abortion by midlevel providers versus doctors					
People	Women seeking termination of pregnancy				
Settings	Specialist health clinics in South Africa and Vietnam and district hospitals in Nepal				
Intervention	Surgical aspiration abortion by midlevel providers				
Comparison	Surgical aspiration abortion by doctors				
Outcomes	Comparative risks*		Difference (95% CI)	Number of participants (studies)	Certainty of the evidence (GRADE)
	By doctors	By midlevel providers			
Incomplete or failed abortion	6 per 1000	11 per 1000	5 more per 1000 ¹ (9 fewer to 17 more)	2894 (1 study)	⊕⊕⊕○ Moderate
Complications	7 per 1000	13 per 1000	6 more per 1000 ² (11 fewer to 167 more)	1104 (1 study)	⊕⊕⊕○ Moderate
CI: Confidence interval GRADE: GRADE Working Group grades of evidence (see above and last page)					
*Illustrative comparative risks					
¹ Two additional cohort studies also suggested an increase in the risk of incomplete or failed abortion					
² Three additional cohort studies reported no difference in odds of complications					

2) Medical abortion procedures administered by midlevel providers compared to doctors

This comparison was examined in only one study.

→ Medical abortion administered by midlevel providers probably leads to fewer incomplete and failed abortions. The certainty of this evidence is moderate.

Medical abortion by midlevel providers compared to doctors					
People	Women seeking termination of pregnancy				
Settings	District hospitals in Nepal				
Intervention	Medical abortion by midlevel providers				
Comparison	Medical abortion by doctors				
Outcomes	Comparative risks*		Difference (95% CI)	Number of participants (studies)	Certainty of the evidence (GRADE)
	By doctors	By midlevel providers			
Incomplete or failed abortion	39 per 1000	27 per 1000	12 fewer per 1000 (200 fewer to 77 more)	1104 (1 study)	⊕⊕⊕○ Moderate
CI: Confidence interval GRADE: GRADE Working Group grades of evidence (see above and last page) *Illustrative comparative risks					

Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
APPLICABILITY	
<p>→ The two randomised trials were carried out in lower- and upper-middle-income countries and thus the measured effects may be transferable to low-income countries.</p>	<p>▷ When assessing the transferability of these findings to low-income settings, the following factors need to be considered:</p> <ul style="list-style-type: none"> - Local epidemiology of abortion rates and incidence of unsafe abortion procedures - The availability of doctors in these settings to perform abortion procedures - The availability and training of midlevel providers to perform surgical and medical abortions, with special attention to providers in public health facilities and rural areas - Accessibility to the necessary pre- to post-abortion care, especially in public facilities and rural areas - The differences in effectiveness and safety of surgical versus medical abortion procedures by midlevel providers - Cost implications of other models of care compared to midlevel provider care
EQUITY	
<p>→ There was no information in the included studies regarding differential effects of the interventions in disadvantaged populations. The trial of surgical abortion procedures was done in private settings in South Africa and Vietnam and participants are likely not representative of disadvantaged populations in these countries.</p>	<p>▷ Given the scarcity of obstetricians and gynaecologists serving disadvantaged populations in low-income settings, using midlevel providers has the potential to expand women's access to safe abortion procedures in underserved areas, especially when incidence of unsafe abortion procedures is high, providing the midlevel providers are recruited, trained, supported and retained in underserved communities. Consideration should be given to health system factors and regulations that will encourage this.</p>
ECONOMIC CONSIDERATIONS	
<p>→ None of the included studies presented cost data comparing midlevel and doctor providers.</p>	<p>▷ It is likely that the provision and management of abortion procedures by midlevel providers may be cost-effective in resource-limited settings due to lower salary costs and scarcity of obstetricians and gynaecologists. However, formal economic evaluations are needed to assess whether midlevel providers of abortion procedures are affordable alternatives to doctor providers with comparable outcomes, specifically in relation to infrastructure and training.</p>
MONITORING & EVALUATION	
<p>→ High certainty evidence on the effectiveness and safety of abortion procedures administered by midlevel providers versus procedures administered by doctors is lacking.</p>	<p>▷ Operational research studies are needed to assess the feasibility and acceptability of rolling out midlevel provision, as well as impact evaluations. Evaluations should also consider the structure of the wider healthcare system and availability of personnel to identify which midlevel providers, if any, are best placed to provide abortion procedures, and also consider how the process from pre- to post-abortion care is managed.</p>

*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

Additional information

Related literature

Lassi ZS, Bhutta ZA. Mid-level health workers for improving the delivery of health services. *Cochrane Database Syst Rev* 2012; 2: CD009649.

Kulier R, Kapp N, Gülmezoglu AM, Hofmeyr GJ, Cheng L, Campana A. Medical methods for first trimester abortion. *Cochrane Database Syst Rev* 2011; 11: CD002855.

Renner RM, Brahmi D, Kapp N. Who can provide effective and safe termination of pregnancy care? A systematic review. *BJOG* 2013 Jan;120(1):23–31.

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Conflict of interest

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

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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

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

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking in low- and middle-income countries.
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

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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

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