WHO recommendations

Optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting

Annex 6

Frameworks related to the other cadres (auxiliary nurses, auxiliary nurse midwives, midwives, nurses, associate clinicians, advanced level associate clinicians, non-specialist doctors)





Should AUXILIARY NURSES administer oxytocin to prevent postpartum haemorrhage, using a standard syringe?

Problem: Poor access to prevention of PPH

Option: Auxiliary nurses administering oxytocin to prevent PPH, using a standard

syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
			\square
	We recommend the use of auxiliary nurses to administer oxytocin to established cadre.	to prevent postpartum haemorrhage, using a standard syringe. We s	suggest using this intervention where auxiliary nurses are already an
Justification	that is not timely for prevention of haemorrhage; failure to diagnose	y nurses to administer oxytocin to <u>prevent</u> postpartum haemorrhage e a second foetus prior to administration; and inappropriate use for o ed; and that the intervention is probably acceptable and feasible. In a	ther purposes. However, the panel feels that the benefits probably
Implementation considerations	The following should be considered when using auxiliary nurses to administer oxytocin: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between auxiliary nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities (e.g. delivery kits) need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Auxiliary nurses and their supervisors need to receive appropriate initial and ongoing training		cluding through regulations and job descriptions any changes in scope of practice. Giving incentives for certain
Monitoring and evaluation	-		
Research priorities	- Studies assessing the effects and the acceptability of using au	uxiliary nurses to administer oxytocin are needed	



2.1. EVIDENCE BASE:

Should AUXILIARY NURSES administer oxytocin to prevent postpartum haemorrhage, using a standard syringe?

Problem: Poor access to prevention of PPH

Option: Auxiliary nurses administering oxytocin to prevent PPH, using a

standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence □ □ □ □ □ □	Indirect evidence: A review of <u>lay health worker</u> programmes (Lewin 2012) examined the effects of packages of care, including one trial in which lay health workers injected sick neonates with antibiotics using a standard syringe. The trial did not report any adverse effects. Overall, the review suggests that these packages of care may lead to a reduction in neonatal (moderate certainty evidence) and child mortality (low certainty evidence).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □	Annex: Page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the	Training	Training 1 week of practice-based training in injection techniques, safe delivery and in diagnosing and managing postpartum haemorrhage.	
JRCE	resources required	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RESOURCE USE	small?		Supplies Oxytocin, syringes, sterile solution, robust supply chain	
ч			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: • Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012) • Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012) • Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012) • There may be a number of challenges with referral of women in labour, including logistics and poor treatment of women at facilities (moderate certainty evidence) (Glenton, Colvin 2012) Annex: page 43 (Rashidian 2012); page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	Significant additional work may be needed to add this intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 43 (Rashidian 2012); page 20 (Colvin 2012); page 26 (Glenton, Colvin 2012)	



Should AUXILIARY NURSES administer oxytocin to treat postpartum haemorrhage, using a standard syringe?

Problem: Poor access to treatment of PPH

Option: Auxiliary nurses administering oxytocin to treat PPH, using a standard

syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option With targeted monitoring and evaluation	We recommend the option	
		lacksquare		
	We suggest considering this option with targeted monitoring and enfunctioning referral system is in place or can be put in place	valuation. We suggest using this intervention only where auxiliary nu	urses are already an established cadre and where a where a well-	
Justification	There is insufficient evidence on the effectiveness of using auxiliary nurses to administer oxytocin to treat postpartum haemorrhage using a standard syringe. Possible undesirable effects include inappropriate use for other purposes. However, the panel feels that the benefits probably outweigh the harms; that minimal clinical decision making is required; and that the intervention is probably acceptable and feasible. In addition, the intervention may reduce inequalities by extending care to underserved populations.			
Implementation considerations	lementation The following should be considered when using auxiliary nurses to administer oxytocin:		cluding through regulations and job descriptions any changes in scope of practice. Giving incentives for certain	
Monitoring and evaluation	-			
Research priorities	- Studies assessing the effects and the acceptability of using au	uxiliary nurses to administer oxytocin are needed		



2.2. EVIDENCE BASE:

Should AUXILIARY NURSES administer oxytocin to treat postpartum haemorrhage, using a standard syringe?

Problem: Poor access to treatment of PPH

Option: Auxiliary nurses administering oxytocin to treat PPH, using a

standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □			
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes	improving the delivery of healt assessed the effects of using a	for studies that assessed the effects of midlevel providers, including auxiliary nurses, in h care services (Lassi 2012). However, this review did not identify any studies that auxiliary nurses for this intervention. We are therefore unable to draw any able or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □	in which lay health workers injudy	programmes (Lewin 2012) examined the effects of packages of care, including one trial ected sick neonates with antibiotics using a standard syringe. The trial did not report any eview suggests that these packages of care may lead to a reduction in neonatal and child mortality (low certainty evidence).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: Page 10 (Lewin 2012	– Table 2)	
			Main resource requirements		
			Resource	Settings in which auxiliary nurses already provide other care	
USE	Are the	No Probably Uncertain Probably Yes Varies	Training	1-2 weeks of practice-based training in injection techniques, safe delivery and in diagnosing and managing postpartum haemorrhage.	
URCE	resources required	no yes	Supervision and monitoring	Regular supervision by midwife or nurse	
RESOURCE USE	small?		Supplies	Oxytocin, syringes, sterile solution, robust supply chain	
4			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012) Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012) Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012) There may be a number of challenges with referral of women in labour, including logistics and poor treatment of women at facilities (moderate certainty evidence) (Glenton, Colvin 2012) Annex: page 43 (Rashidian 2012); page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	Significant additional work may be needed to add this intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Also, where oxytocin is being used to treat PPH, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 43 (Rashidian 2012); page 20 (Colvin 2012); page 26 (Glenton, Colvin 2012)	



Should AUXILIARY NURSES administer oxytocin to prevent postpartum haemorrhage, using a compact, autodisable, prefilled injection device (CPAD) such as Uniject?

Problem: Poor access to treatment for prevention of PPH

Option: Auxiliary nurses administering oxytocin using a CPAD to prevent PPH

Comparison: Care delivered by other cadre or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option			
			\square			
	We recommend this option. We suggest using this who	ere auxiliary nurses are already an established cadre.				
Justification	There is insufficient evidence on the effectiveness of using auxiliary nurses to administer oxytocin to <u>prevent</u> postpartum haemorrhage using a CPAD. Possible undesirable effects include use that is not timely for prevention of haemorrhage; failure to diagnose a second foetus prior to administration; and inappropriate use for other purposes. However, this intervention is probably acceptable and feasible. In addition, the panel feels that the benefits probably outweigh the harms; that minimal clinical decision making is required, and that the intervention may reduce inequalities by extending care to underserved populations.					
Implementation considerations	The following should be considered when using auxiliary nurses to administer oxytocin: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between auxiliary nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities (e.g. delivery kits) need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Auxiliary nurses and their supervisors need to receive appropriate initial and ongoing training					
Monitoring and evaluation	-					
Research priorities	- Studies assessing the effects and the acceptability of u	sing auxiliary nurses to administer oxytocin are needed				



2.3. EVIDENCE BASE:

Should AUXILIARY NURSES administer oxytocin to <u>prevent</u> treat postpartum haemorrhage, using a compact, autodisable, prefilled device (CPAD) such as Uniject?

Problem: Poor access to treatment for prevention of PPH **Option**: Auxiliary nurses administering oxytocin using a CPAD to prevent

PPH

Comparison: Care delivered by other cadre or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA JUDGEMENT		EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct ovidence low □ □ □ □ □ □ □ □ □	Indirect evidence: A review of lay health worker programmes (Lewin 2012) examined the effects of packages of care, including one trial in which lay health workers injected sick neonates with antibiotics using a standard syringe. The trial did not report any adverse effects. Overall, the review suggests that these packages of care may lead to a reduction in neonatal (moderate certainty evidence) and child mortality (low certainty evidence).	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the		Training 1 week of practice-based training in injection techniques, safe delivery and in diagnosing and managing postpartum haemorrhage.	
RCE	resources	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RESOURCE	required small?		Supplies Oxytocin CPAD, sterile solution, robust supply chain	
ч			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: • Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). • Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). • Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). • There may be a number of challenges with referral of women in labour, including logistics and poor treatment of women at facilities (moderate certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	While this intervention is simpler to deliver than oxytocin using a standard syringe, significant additional work may still be needed to add this intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Also, where oxytocin is being used to treat PPH, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES administer oxytocin to treat postpartum haemorrhage using a compact, autodisable, prefilled injection device (CPAD) such as Uniject?

Problem: Poor access to treatment for PPH

Option: Auxiliary nurses administering oxytocin using a CPAD to treat PPH

Comparison: Care delivered by other cadre or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		\square		
	We suggest considering this option with targeted monitoring and evaluation. We suggest using this intervention only where auxiliary nurses are already an established cadre and where a well-functioning referral system is in place or can be put in place.			
Justification	There is insufficient evidence on the effectiveness of using auxiliary nurses to administer oxytocin to treat postpartum haemorrhage using a CPAD. Possible undesirable effects include inappropriate use for other purposes However, this intervention is probably acceptable and feasible. In addition, the panel feels that the benefits probably outweigh the harms; that minimal clinical decision making is required, and that the intervention may reduce inequalities by extending care to underserved populations. As the assessment and diagnosis of postpartum haemorrhage requires some experience and judgement, the panel suggests that the option is considered with targeted monitoring and evaluation.			
Implementation considerations	The following should be considered when using auxiliary nurses to administer oxytocin: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between auxiliary nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities (e.g. delivery kits) need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Auxiliary nurses and their supervisors need to receive appropriate initial and ongoing training			
Monitoring and evaluation	luation _			
Research priorities	- Studies assessing the effects and the acceptability of using auxiliary nurses to administer oxytocin are needed			



2.4. EVIDENCE BASE:

Should AUXILIARY NURSES administer oxytocin to treat postpartum haemorrhage, using a compact, autodisable, prefilled injection device (CPAD) such as Uniject?

Problem: Poor access to treatment for PPH

Option: Auxiliary nurses administering oxytocin using a CPAD to treat

Comparison: Care delivered by other cadre or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA JUDGEMENT		JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes		
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct varies evidence □ □ □ □ □ □	Indirect evidence: A review of lay health worker programmes (Lewin 2012) examined the effects of packages of care, including one trial in which lay health workers injected sick neonates with antibiotics using a standard syringe. The trial did not report any adverse effects. Overall, the review suggests that these packages of care may lead to a reduction in neonatal (moderate certainty evidence) and child mortality (low certainty evidence).	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the	W 0.111 W 11 0.111 W 11 11	Training 1 week of practice-based training in injection techniques, safe delivery and in diagnosing and managing postpartum haemorrhage.	
RCE	resources required	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RESOURCE	small?		Supplies Oxytocin CPAD, sterile solution, robust supply chain	
ĸ			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: • Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). • Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). • Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). • There may be a number of challenges with referral of women in labour, including logistics and poor treatment of women at facilities (moderate certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	While this intervention is simpler to deliver than oxytocin using a standard syringe, significant additional work may still be needed to add this intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Also, where oxytocin is being used to treat PPH, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



2.5 and 2.6. RECOMMENDATION:

Should AUXILIARY NURSES administer misoprostol to (a) prevent and (b) to treat postpartum haemorrhage before referral?

Problem: Poor access to prevention and treatment of postpartum

haemorrhage **Option**: Auxiliary nurses administering misoprostol Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option	We recommend the option
			\square
	We recommend the use of auxiliary nurses to administer misoprosto For <u>prevention</u> of postpartum haemorrhage, we suggest using the For <u>treatment</u> of postpartum haemorrhage, we suggest using this be put in place	is intervention where auxiliary nurses are already an established	I cadre cadre and where a well-functioning referral system is in place or can
Justification	There is insufficient evidence on the effectiveness of using auxiliary r feasible. In addition, the panel feels that the benefits probably outwei underserved populations. A World Health Organisation guideline also (600mcg PO) by community health workers and lay health workers is	gh the harms; that minimal clinical decision making is required; a recommends that where skilled birth attendants are not present	and that the intervention may reduce inequalities by extending care to and oxytocin is not available, the administration of misoprostol
Implementation considerations	 The distribution of roles and responsibilities between aux Changes in regulations may be necessary to support any Implementation needs to be in the context of a comprehe tasks but not for others may negatively affect the work that 	e planning and implementation of the intervention to ensure accer- iliary nurses and other health workers needs to be made clear, in changes in auxiliary nurses' scope of practice nsive remuneration scheme, in which salaries or incentives reflect it is carried out tical (e.g. transport) and relational barriers need to be addressed s) need to be secure rvision needs to be regular and supportive	ncluding through regulations and job descriptions ct any changes in scope of practice. Giving incentives for certain
Monitoring and evaluation			
Research priorities	Studies assessing the effects and the acceptability of using auxiliary	nurses to administer misoprostol are needed	



2.5 and 2.6. EVIDENCE BASE:

Should AUXILIARY NURSES administer misoprostol to (a) prevent and (b) to treat postpartum haemorrhage before referral?

Problem: Poor access to prevention and treatment of postpartum

haemorrhage **Option**: Auxiliary nurses administering misoprostol Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes		A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes			
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct low	studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		recommendation regarding the use of lay health workers or auxiliary nurses to administer misoprostol at the time of delivery for the treatment of postpartum haemorrhage.
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □			The guideline also notes that, in view of the past concerns regarding community distribution of misoprostol and serious consequences of administration before birth, emphasis should be placed on the training of those providing misoprostol and monitoring of these interventions with appropriate indicators.
			Main resource requirements		
			Resource	Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the	No Probably Uncertain Probably Yes Varies	Training	1-2 weeks of practice-based training in safe delivery and in diagnosing and managing postpartum haemorrhage.	
URC	resources required	no yes	Supervision and monitoring	Regular supervision by midwife or nurse	
RESC	small?		Supplies	Misoprostol tablets, robust supply chain	
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). There may be a number of challenges with referral of women in labour, including logistics and poor treatment of women at facilities (moderate certainty evidence) (Glenton, Colvin 2012).	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	While this intervention is simpler to deliver than oxytocin, significant additional work may still be needed to add this intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES distribute misoprostol to women during pregnancy for self-administration after childbirth?

Problem: Poor access to treatment for prevention of postpartum haemorrhage Option: Auxiliary nurses distributing misoprostol to women during pregnancy for self-ministration after childbirth

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	No recommendation has been made	We recommend the option
		$\overline{\square}$	
	No recommendation has been made for this option.		
Justification		ostol to women during pregnancy for self-administration after childbir s also noted that this may improve access to misoprostol in some se	th before considering the cadres that can undertake distribution. The ttings.
mplementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies assessing the effects and the acceptability of auxiliary nu haemorrhage.	urses distributing misoprostol to women during pregnancy for self-ad	ministration after childbirth for prevention of postpartum



2.7. EVIDENCE BASE:

Should AUXILIARY NURSES distribute misoprostol to women during pregnancy for self-administration after childbirth?

Problem: Poor access to treatment for prevention of postpartum

haemorrhage

Option: Auxiliary nurses distributing misoprostol to women during

pregnancy for self-ministration after childbirth

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. In addition, a systematic review assessed the effectiveness and safety of advance misoprostol provision for postpartum haemorrhage prevention and treatment in non-facility births. This review did not identify any studies (Oladapo 2012). We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		Note: A World Health Organisation guideline states that there is insufficient evidence to recommend the antenatal distribution of misoprostol to pregnant women for self-
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	nurses, in improving the delivery any studies that assessed the er review assessed the effectivene prevention and treatment in non			
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of	Very Low Moderate High No direct Varies	are therefore unable to draw a intervention.			
	the anticipated effects?	low evidence	Additional considerations : Although there has been general concern that providing misoprostol at home may discourage women from coming to a facility for childbirth this concern has not been substantiated by programmatic evidence.		collected) (WHO, 2012).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes				
			Main resource requirements			
			Resource	Settings in which auxiliary nurses already provide other care		
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training	1-2 weeks of practice-based training in safe delivery and in communication and health promotion skills.		
OURC	required	no yes	Supervision and monitoring	Regular supervision by midwife or nurse		
RES	small?		Supplies	Misoprostol tablets, robust supply chain, printed information for pregnant women and their families		
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Some LHWs voiced concerns about possible social or legal consequences if something went wrong following the administration of drugs. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	The intervention is relatively simple to deliver as all pregnant women would be eligible to receive misoprostol and the auxiliary nurse does not have to be present at the time of delivery. Some additional work would be needed to add this intervention to the existing tasks of auxiliary nurses. It is likely to require changes in regulations; and significant changes to drug supplies and training. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). For a range of issues (no evidence on misoprostol specifically), the review of lay health workers suggests that counselling and communication was perceived as important but as a complex task for which they sometimes felt unprepared and for which they requested specific training (moderate certainty evidence). However, trainers were not necessarily competent to train them in these skills (low certainty evidence) (Glenton, Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM

Option: Auxiliary nurses delivering injectable antibiotics **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
	We suggest considering this option only in the context of rigorous referral system is in place or can be put in place	research. We suggest evaluating this intervention where auxiliary n	urses are already an established cadre and where a well-functioning	
Justification	There is insufficient evidence on the effectiveness of this intervention. However, this intervention is probably acceptable and feasible and may reduce inequalities by extending care to underserved populations.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities	Studies assessing the effects and the acceptability of using auxiliary nurses to delivering an initial dose of injectable antibiotics to treat preterm PROM prior to referral.			



4.1 EVIDENCE BASE:

Should AUXILIARY NURSES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM

Option: Auxiliary nurses delivering injectable antibiotics **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □	any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources required	No Probably Uncertain Probably Yes Varies no yes	Training e.g. two weeks of training for auxiliary nurses to diagnosis and manage, including diagnosis of amniotic fluid volume by ultrasound where available. This assumes proficiency in diagnosing pregnancy, assessing gestational age, and assessing leakage of amniotic fluid through observation and simple pH testing	
RES	small?		Supervision and monitoring Regular supervision by a midwife or doctor	
			Supplies Antibiotics, equipment needed for diagnosis, e.g. litmus paper. Ultrasound equipment in some settings	
			Referral Transportation, adequate referral centre	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibilities in relation to other health workers may be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (antibiotics and simple diagnostic tools). In addition, it is simple to deliver and requires only a relatively small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurses to prescribe and deliver injectable antibiotics. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



7.1 and 7.2. RECOMMENDATION:

Should AUXILIARY NURSES (a) initiate and (b) maintain kangaroo mother care for low birth weight infants?

Problem: Low utilisation of kangaroo mother care for low birth weight infants **Option**: Auxiliary nurses initiating and maintaining kangaroo mother care

Comparison: Usual care

Setting: Community/primary health care settings in LMICs

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
	We suggest considering this option with targeted monitoring and evaluation. We suggest using this intervention where auxiliary nurses are already an established cadre.			
Justification	There is insufficient evidence on the effectiveness and feasibility of auxiliary nurses initiating kangaroo mother care for low birth weight infants. However, the intervention may have important benefits and is probably feasible and acceptable. It may also reduce inequalities by extending care to underserved populations.			
Implementation considerations	The following should be considered when using auxiliary nurses to initiate and maintain kangaroo mother care: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers Local beliefs and practical circumstances related to the health conditions in question should be addressed within the programme design The distribution of roles and responsibilities between auxiliary nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities (e.g. delivery kits) need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Auxiliary nurses and their supervisors need to receive appropriate initial and ongoing training			
Monitoring and evaluation	Monitoring and evaluation should focus on different weight categories to ensure that babies with birth weight less than 1500 grams are not adversely affected.			
Research priorities				



7.1 and 7.2. EVIDENCE BASE:

Should AUXILIARY NURSES (a) initiate and (b) maintain kangaroo mother care for low birth weight infants?

Problem: Low utilisation of kangaroo mother care for low birth weight

Option: Auxiliary nurses initiating and maintaining kangaroo mother care

Comparison: Usual care

Setting: Community/primary health care settings in LMICs

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	Although direct evidence on effects is lacking, there is some evidence that lay health workers can deliver this intervention, it is simple to implement, is likely to have benefits and is not likely to have significant
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence	undesirable effects. We have therefore judged the desirable effects as probably large relative to the undesirable effects.
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct low	A systematic review of the effects of lay health workers (Lewin 2012) identified three trials from Bangladesh and India that assessed the effectiveness of promotion of kangaroo care or skin-to-skin care after birth, although promotion was not specifically targeted at low birth weight babies. In two of the trials, LHWs promoted the intervention as part of a package of maternal and newborn care while, in one study, LHWs taught kangaroo care to expectant mothers and their families. One trial suggests that the intervention probably leads to an increase in the use of skin-to-skin care within 24 hours after birth, compared to usual	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	care (moderate certainty evidence). Two trials suggest that the overall package of maternal and newborn care may reduce neonatal mortality (low certainty evidence) Annex: page13 (Lewin 2012 – Table 4)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
			Training Training in the technique is necessary and may take 1-2 weeks	
E USE	Are the	No Probably Uncertain Probably Yes Varies	Supervision and monitoring Regular supervision by an experienced kangaroo care practitioner	
RESOURCE USE	resources required small?	no yes U	Supplies Minimal: promotional and demonstrational materials; carrying pouches for babies	
RE			Referral To a health facility if any health problems are detected	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Although there is no direct evidence on effectiveness, the benefits are likely to be large in relation to the incremental costs	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggest that: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Recipients may prefer nurses, compared to doctors, for issues that require more attention and time (low certainty evidence) Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □ □	The intervention is relatively simple, requires no supplies and is unlikely to require changes to norms or regulations. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary. Systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES deliver injectable antibiotics for neonatal sepsis, using a standard syringe?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurses delivering injectable antibiotics for neonatal sepsis **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option		
		\square			
	- We suggest considering this option only in the context of rigorous guidelines are available and where a well-functioning referra	orous research. We suggest evaluating this intervention where auxial system is in place or can be put in place.	iary nurses are already an established cadre, where clear clinical		
Justification	There is insufficient evidence on the effectiveness of auxiliary nurses delivering injectable antibiotics for neonatal sepsis using a standard syringe, and its feasibility is uncertain. However, this intervention may be acceptable and may reduce inequalities by extending care to underserved populations. Also, giving intramuscular and intravenous injections are generally within the standard competencies of auxiliary nurses.				
Implementation considerations	Not applicable				
Monitoring and evaluation					
Research priorities	Studies are needed to assess the effects of using auxiliary nurses	s to make a diagnosis and deliver injectable antibiotics for neonatal	sepsis		



8.1. EVIDENCE BASE:

Should AUXILIARY NURSES deliver injectable antibiotics for neonatal sepsis, using a standard syringe?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurses delivering injectable antibiotics for neonatal

sepsis

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes	nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	ntify
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence	A systematic review of the effects of lay health workers (Lewin 2012) identified a number of trials from LMIC settings where packages of care were delivered by LHWs. In one trial, the package included LHWs injecting procaine penicillin and gentamicin to treat sick neonates, apparently using a standard syringe. The trial did not report any adverse effects of LHWs using injectable antibiotics. Overall, the trials suggest that these packages of care may lead to a reduction in neonatal mortality (moderate certainty evidence) and child mortality (low certainty evidence).	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies No yes	Annex: page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the	N 0.44 4 4 5 0.44 Y	Training 1-2 weeks of practice-based training in injection techniques, in diagnosing and managing neontal sepsis	
RCE	resources	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RESOURCE USE	required small?		Supplies Antibiotics, syringes, sterile solution, robust supply chain	
RE			Referral Transportation, adequate referral centre offering neonatal care	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012) Recipients, LHWs and other health workers may find the delivery of drugs and vaccines, including antibiotics for neonatal sepsis, by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012) Activities that demand that the LHW is present at specific times may lead to changes in working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012) Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	Significant additional work may be required to add the intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; significant changes to drug supplies and training; and validation of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex : page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES deliver antibiotics for neonatal sepsis using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurses delivering antibiotics for neonatal sepsis using CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option		
		Ø			
	- We suggest considering this option only in the context of rigorous research. We suggest evaluating this intervention where auxiliary nurses are already an established cadre, where clear clinical protocols are available and where a well-functioning referral system is in place or can be put in place.				
Justification	There is insufficient evidence on the effectiveness of auxiliary nurses delivering antibiotics for neonatal sepsis using a CPAD, and its feasibility is uncertain. However, this intervention may be acceptable and may reduce inequalities by extending care to underserved populations. Also, giving intramuscular and intravenous injections are generally within the standard competencies of auxiliary nurses. We therefore suggest considering the option in the context of rigorous research.				
Implementation considerations	Not applicable				
Monitoring and evaluation					
Research priorities	Studies are needed to assess the effects and the acceptability of	using auxiliary nurses to diagnose sepsis and deliver injectable anti	biotics for neonatal sepsis using a CPAD		



8.2. EVIDENCE BASE:

Should AUXILIARY NURSES deliver antibiotics for neonatal sepsis, using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurses delivering antibiotics for neonatal sepsis using

CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence □ □ □ □ □	Indirect evidence: A systematic review of the effects of lay health workers (Lewin 2012) identified a number of trials from LMIC settings where packages of care were delivered by LHWs. In one trial, the package included LHWs injecting procaine penicillin and gentamicin to treat sick neonates, apparently using a standard syringe. The trial did not report any adverse effects of LHWs using injectable antibiotics. Overall, the trials suggest that these packages of care may lead to a reduction in neonatal mortality (moderate certainty evidence) and child mortality (low certainty evidence).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the		Training 1-2 weeks of practice-based training in injection techniques and in diagnosing and managing neontal sepsis	
RCE	resources	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RESOURCE USE	required small?		Supplies Antibiotic CPAD, sterile solution, robust supply chain	
RE			Referral Transportation, adequate referral centre offering neonatal care	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes 🗆 🗖 🗖	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Recipients, LHWs and other health workers may find the delivery of drugs and vaccines, including antibiotics for neonatal sepsis, by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Activities that demand that the LHW is present at specific times may lead to changes in working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertai Probabl Yes Vari no n y es yes	Significant additional work may be required to add the intervention to the tasks of auxiliary nurses. It is likely to require changes in regulations; significant changes to drug supplies and training; and validation of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES deliver neonatal resuscitation?

Problem: Poor access to neonatal care

Option: Auxiliary nurses delivering neonatal resuscitation
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
		Ø		
	We suggest considering this option only in the context of rigorous referral system is in place or can be put in place.	research. We suggest evaluating this intervention where auxiliary n	urses are already an established cadre and where a well-functioning	
Justification	There is insufficient evidence on the effectiveness of auxiliary nurses delivering neonatal resuscitation. However, this intervention is probably acceptable, is probably feasible and may reduce inequalities by extending care to underserved populations.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities	Studies are needed to assess the effects and the acceptability of using auxiliary nurses to deliver neonatal resuscitation			



9.1. EVIDENCE BASE:

Should AUXILIARY NURSES deliver neonatal resuscitation?

Problem: Poor access to neonatal care

Option: Auxiliary nurses delivering neonatal resuscitation
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct varies evidence □ □ □ □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
111			Training 1-2 days of practice-based training in neonatal resuscitation	
RESOURCE USE	Are the	No Probably Uncertain Probably Yes Varies	Supervision and monitoring Regular supervision by midwife or nurse	
JURC	resources required	no yes	Supplies Resuscitation bag and mask	
RES	small?		Referral Transportation, adequate referral centre offering neonatal care	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Significant additional work may be required to add the intervention to the tasks of auxiliary nurses. It is likely to need changes in regulations; significant changes to supplies and training; and development of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



Should AUXILIARY NURSES administer intravenous fluid for resuscitation as part of postpartum haemorrhage treatment?

Problem: Poor access to treatment for post-partum haemorrhage **Option**: Auxiliary nurses administering intravenous fluid for resuscitation **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option		
			\square		
	We recommend this option. We suggest implementing this intervention where auxiliary nurses are already an established cadre and where a well-functioning referral system is in place. This intervention should be operationalised in the context of the WHO PPH guidelines, which outline a comprehensive approach to managing PPH.				
Justification	There is insufficient evidence on the effectiveness and acceptability of auxiliary nurses administering intravenous fluid for resuscitation, as part of PPH treatment. However, the panel considered this intervention to be part of the core skills of auxiliary nurses. In addition, it is probably feasible and may also reduce inequalities by extending care to underserved populations.				
Implementation considerations	The following should be considered when using auxiliary nurses to administer intravenous fluid for resuscitation: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between auxiliary nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Auxiliary nurses and their supervisors need to receive appropriate initial and ongoing training				
Monitoring and evaluation	-				
Research priorities	-				



11.1. EVIDENCE BASE:

Should AUXILIARY NURSES administer intravenous fluid for resuscitation as part of postpartum haemorrhage treatment?

Problem: Poor access to treatment for post-partum haemorrhage **Option**: Auxiliary nurses administering intravenous fluid for resuscitation **Comparison**: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes 🗆 🗖 🗖		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
111			Training 1 week training in emergency obstetric care	
E USI	Are the	No Probably Uncertain Probably Yes Varies	Supervision and monitoring Regular supervision by midwife or nurse	
URC	resources required	No yes □ □ □ □	Supplies IV fluids and sets	
RESOURCE USE	small?		Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies No yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies No yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: One systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggests that: Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence) Nurses themselves may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctor acceptance appears to be influenced by level of nurse experience (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies No yes	This intervention requires some supplies. Adequate referral to a higher level of care for further management may be necessary. In addition, this intervention is likely to require changes to norms or regulations. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.2. RECOMMENDATION:

Should AUXILIARY NURSES perform internal bimanual uterine compression for postpartum haemorrhage?

Problem: Poor access to treatment for post-partum haemorrhage

Option: Auxiliary nurses performing internal bimanual uterine compression for

PPH

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
We suggest considering this option with targeted monitoring and evaluation. We suggest implementing this intervention where auxiliary nurses are already an established of functioning referral system is in place or can be put in place. This intervention should be operationalised in the context of the WHO PPH guidelines, which outline a compre PPH.			
Justification	There is insufficient evidence on the effectiveness and acceptability of auxiliary nurses performing internal bimanual uterine compression for postpartum haemorrhage. However, the risk of significant harms is low, it may be acceptable, is probably feasible and may also reduce inequalities by extending care to underserved populations.		
Implementation considerations			ct any changes in scope of practice. Giving incentives for certain
Monitoring and evaluation	- Any harms associated with bimanual uterine compres	sion delivered by auxiliary nurses	
Research priorities	-		



11.2. EVIDENCE BASE:

Should AUXILIARY NURSES perform internal bimanual uterine compression for postpartum haemorrhage?

Problem: Poor access to treatment for post-partum haemorrhage **Option**: Auxiliary nurses performing internal bimanual uterine compression for PPH Comparison: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes 🗆 🗖 🗖		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
111			Training 1 week training in emergency obstetric care	
E USI	Are the	No Probably Uncertain Probably Yes Varies	Supervision and monitoring Regular supervision by midwife or nurse	
URC	resources required	No yes D	Supplies Antiseptic solution	
RESOURCE USE	small?		Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?		Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies No yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: One systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggests that: Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence) Nurses themselves may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctor acceptance appears to be influenced by level of nurse experience (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies No yes	This intervention requires some supplies. Adequate referral to a higher level of care for further management may be necessary. In addition, this intervention is likely to require changes to norms or regulations. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.3. RECOMMENDATION:

Should AUXILIARY NURSES perform suturing for minor perineal / genital lacerations?

Problem: Poor access to treatment for post-partum haemorrhage **Option**: Auxiliary nurses performing suturing for minor perineal/genital

lacerations

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
			\square			
	We recommend this option. We suggest implementing this intervention where auxiliary nurses are already an established cadre. This intervention should be operationalised in the context of the WHO PPH guidelines, which outline a comprehensive approach to managing PPH.					
Justification	There is insufficient evidence on the effectiveness and acceptability of auxiliary nurses performing suturing for minor perineal / genital lacerations. However, the panel considered suturing to be part the core skills of auxiliary nurses. In addition, it is probably feasible and may also reduce inequalities by extending care to underserved populations.					
Implementation considerations	 The distribution of roles and responsibilities between at Changes in regulations may be necessary to support at Implementation needs to be in the context of a compret tasks but not for others may negatively affect the work to 	the planning and implementation of the intervention to ensure acceuxiliary nurses and other health workers needs to be made clear, in my changes in auxiliary nurses' scope of practice mensive remuneration scheme, in which salaries or incentives reflethat is carried out gistical (e.g. transport) and relational barriers need to be addressed ecure prevision needs to be regular and supportive	ncluding through regulations and job descriptions ct any changes in scope of practice. Giving incentives for certain			
Monitoring and evaluation	-					
Research priorities	-					



11.3. EVIDENCE BASE:

Should AUXILIARY NURSES perform suturing for minor perineal / genital lacerations?

Problem: Poor access to treatment for post-partum haemorrhage

Option: Auxiliary nurses performing suturing for minor perineal/genital lacerations **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct varies low □ □ □ □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
USE	Are the	No Probably Uncertain Probably Yes Varies	Training 1 week training in emergency obstetric care	
URCE	resources required	No yes	Supervision and monitoring Regular supervision by midwife or nurse	-
RESOURCE USE	small?		Supplies Sutures, antiseptic solution	
RE			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies No yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies No yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: One systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggests that: Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence) Nurses themselves may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctor acceptance appears to be influenced by level of nurse experience (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence).	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies No yes	This intervention requires some supplies. Adequate referral to a higher level of care for further management may be necessary. In addition, this intervention is likely to require changes to norms or regulations. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.4. RECOMMENDATION:

Should AUXILIARY NURSES administer antihypertensives for severe high blood pressure in pregnancy?

Problem: Poor access to treatment for severe high blood pressure in

pregnancy

Option: Auxiliary nurses administering antihypertensives for severe high blood pressure in pregnancy

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation We recommend against the option We suggest considering the option only in the context We recommend the option of rigorous research $\overline{\mathbf{A}}$ We suggest considering this option only in the context of rigorous research. We suggest evaluating this intervention where auxiliary nurses are already an established cadre; where a well-functioning referral system is in place or can be put in place; and where care is delivered in the context of a standard protocol. **Justification** There is insufficient evidence on the effectiveness of auxiliary nurses administering these drugs. However, this may be acceptable and feasible, and may reduce inequalities in settings where access to more highly trained providers is limited. Implementation Not applicable considerations Monitoring and evaluation Research priorities Studies assessing the effects and the acceptability of using auxiliary nurses to administer (a) antihypertensives for high blood pressure and (b) corticosteroids to pregnant women are needed



11.4. EVIDENCE BASE:

Should AUXILIARY NURSES administer antihypertensives for severe high blood pressure in pregnancy?

Problem: Poor access to treatment for severe high blood pressure in

Option: Auxiliary nurses administering antihypertensives for severe high

blood pressure in pregnancy

Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA JUDGEMENT		EVIDENCE		COMMENTS AND QUERIES		
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes					
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic roving sparshed for	systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary			
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct low □ □ □ □ □ □ □ □ □	nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.				
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes					
			Main resource requirements				
			Resource	Settings in which auxiliary nurses already provide other care			
RESOURCE USE	Are the	No Probably Uncertain Probably Yes Varies	Training	E.g. 2 weeks of practice-based training in diagnosing and managing hypertension in pregnancy			
URCE	resources required	no yes	Supervision and monitoring	Regular supervision by midwife or doctor			
RESO	small?		Supplies	Antihypertensives, blood pressure measurement device			
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available			
			-				



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibility for patient care (low certainty evidence). Also, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence). 	
			Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. While training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurses to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.5. RECOMMENDATION:

Should AUXILIARY NURSES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment in the context of preterm labour

Option: Auxiliary nurses administering corticosteroids

Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
	We recommend against the use of auxiliary nurses to administer of	corticosteroids to pregnant women in the context of preterm labour	
Justification	There is insufficient evidence on the effectiveness of auxiliary nurses administering these drugs; and they do not have the necessary clinical skills for diagnosis of preterm labour. We therefore recommend against the option.		
Implementation considerations	Not applicable		
Monitoring and evaluation	-		
Research priorities	-		



11.5. EVIDENCE BASE:

Should AUXILIARY NURSES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment in the context of preterm labour

Option: Auxiliary nurses administering corticosteroids **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

	CRITERIA JUDGEMENT EVIDENCE		EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct varies evidence □ □ □ □ □ □		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training E.g. 2 weeks of practice-based training in diagnosing and managing preterm labour	
OUR	required small?		Supervision and monitoring Regular supervision by midwife or doctor	
RES	Sman?		Supplies Corticosteroids	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
Ì	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES

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	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibility for patient care (low certainty evidence). Also, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. While training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurses to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.6. RECOMMENDATION:

Should AUXILIARY NURSES deliver maternal intrapartum care (including labour monitoring, e.g. using a partograph; foetal heart rate monitoring by auscultation; decision to transfer for poor progress; delivery of the baby)?

Problem: Poor access to intrapartum care

Option: Auxiliary nurses delivering intrapartum interventions Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option	We recommend the option	
	\square			
	We recommend against auxiliary nurses delivering these maternal in	ntrapartum interventions.		
Justification	The effects of using auxiliary nurses to deliver maternal intrapartum care are uncertain. In addition, the delivery of intra-partum interventions requires considerable training and skills which auxiliary nurse do not generally have. Delivering this training would result in a different cadre.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities Studies assessing the effects and the acceptability of using auxiliary nurses to deliver maternal intrapartum interventions are needed				



11.6. EVIDENCE BASE:

Should AUXILIARY NURSES deliver maternal intrapartum care (including labour monitoring, e.g. using a partograph; foetal heart rate monitoring by auscultation; decision to transfer for poor progress; delivery of the baby)?

Problem: Poor access to intrapartum care

Option: Auxiliary nurses delivering intrapartum interventions **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		QUERIES TO PANEL
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		curses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any tudies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurses for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct low Varies			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes			
			Main resource requirements		
SE	A #		Resource	Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources required	No Probably Uncertain Probably Yes Varies no yes	Training	Training needs are significant, requires learning of appropriate monitoring and care during labour	
RESO	small?		Supervision and monitoring	Regular supervision would be needed by a senior midwife or doctor	
			Supplies	Sterile gloves, Pinard stethoscope, partograph	
			Referral	Essential to be able to refer to facility with skilled birth attendants	



	CRITERIA	JUDGEMENT	EVIDENCE	QUERIES TO PANEL
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Two systematic reviews (Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to midwifes and nurses. This review suggests that: Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence) (Rashidian 2012) Nurses themselves may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctor acceptance appears to be influenced by level of nurse experience (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence) (Rashidian 2012) Relationships between doulas, TBAs or other birth supporters and professional midwives may be ambivalent, and at times, directly conflictual. This may have been due to the fact that midwives disliked the involvement of others in the emotional support of the mother during labour, feeling that this shifted the relationship between mother and midwife, often in a more medical direction (moderate certainty evidence) (Colvin 2012).	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Minimal supplies and equipment are required and changes to norms or regulations are unlikely to be needed. The interventions require training and supervision. Systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.1. RECOMMENDATION:

Should AUXILIARY NURSES initiate and maintain injectable contraceptives using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable contraceptives

using a CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	No recommendation has been made	We recommend the option	
		✓		
	No recommendation was made for this option.			
Justification	We need research about the effectiveness of delivering injectable contraceptives using a compact, prefilled, autodisable device (CPAD) such as Uniject before considering the cadres that can undertake delivery. The panel therefore did not make a recommendation. It was also noted that studies on this question are underway.			
Implementation considerations	Not applicable.			
Monitoring and evaluation	Not applicable			
Research priorities	Not applicable			



12.1. EVIDENCE BASE:

Should AUXILIARY NURSES initiate and maintain injectable contraceptives using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable

contraceptives using a CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA JUDGEMENT		EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 201	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). Neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to deliver injectable contraceptives using a CPAD device. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: Another systematic review (Oladapo 2012) assessed the effects of LHWs delivering injectable contraceptives to women of reproductive age. This review identified one study from Uganda in which women received DMPA from LHWs using 'autodisable' syringes (it was not clear whether this was a CPAD device). It is uncertain whether LHWs delivering injectable contraceptives improves contraceptive uptake and maintains safety and patient satisfaction because the quality of the evidence from this study is very low. Annex: page 15 (Oladapo 2012)		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence			
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes			
			Main resource requirements		While the costs of CPAD devices are
USE	Are the	:	Resource	Settings in which auxiliary nurses already provide other care	currently higher than standard syringe, these costs may decrease as
RESOURCE USE	resources required	Durces No Probably Uncertain Probably Yes Varies no yes	Training	1-2 weeks of practice-based training in injection techniques and in contraceptive methods and promotion	production volumes increase.
RES	small?		Supervision and monitoring	Regular supervision by midwife or nurse	
			Supplies	Contraceptive CPAD, sterile solution, robust supply chain	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives temselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (contraceptive CPAD, sterile solution). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.2. RECOMMENDATIONS:

Should AUXILIARY NURSES initiate and maintain injectable contraceptives using a standard syringe?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable contraceptives

using a standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
	We recommend the use of auxiliary nurses to deliver injectable contraceptives using a standard syringe with targeted monitoring and evaluation.					
Justification		tervention. However, this intervention may be a cost-effective ry of injections is part of auxiliary nurse practice in a number				
Implementation considerations			lear, including through regulations and job descriptions s reflect any changes in scope of practice. Giving incentives smoting or delivering reproductive health services to women ried out by females icating with recipients and in side effects of different for determining who should receive contraception			
Monitoring and evaluation	Implementation should include monitoring of the s	standard of counselling on contraceptive choices.				
Research priorities						



12.2. EVIDENCE BASE:

Should AUXILIARY NURSES initiate and maintain injectable contraceptives using a standard syringe?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable

contraceptives using a standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safe	ety of task shifting
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). Neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to deliver injectable contraceptives using a standard syringe. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: Another systematic review (Oladapo 2012) assessed the effects of <u>LH</u> injectable contraceptives to women of reproductive age. This review identified one study fr which women received DMPA from LHWs using 'autodisable' syringes (these were not CP uncertain whether LHWs delivering injectable contraceptives improves contraceptive uptal	om Uganda in AD devices). It is se and maintains
BENEFI	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	safety and patient satisfaction because the quality of the evidence from this study is very loannex: page 15 (Oladapo 2012)	DW.
			Main resource requirements	
ш			Resource Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources required	No Probably Uncertain Probably Yes Varies Training	Training 1-2 weeks of practice-based training in injection techniques in contraceptive methods and promotion; universal precaution	
RESO	small?		Supervision and Regular supervision by midwife or nurse monitoring	
			Supplies Injectable contraceptives, syringes, sterile solution, robust supply chain	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (injectable contraceptives, syringes, sterile solution). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.3. RECOMMENDATION:

Should AUXILIARY NURSES insert and remove intrauterine device (IUDs)?

Problem: Poor access to contraception

Option: Auxiliary nurses inserting and removing IUDs
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
		\square		
	We suggest considering using use auxiliary nurses to insert	and remove IUDs only in the context of rigorous research.		
Justification	There is insufficient evidence on the effectiveness of this intervention. In addition, auxiliary nurses do not have pelvic assessment competency within their scope and would requir some training. However, this intervention may be a cost-effective, feasible and acceptable approach and may reduce inequalities by extending care to underserved populations.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities				



12.3. EVIDENCE BASE:

Should AUXILIARY NURSES insert and remove intrauterine device (IUDs)

Problem: Poor access to contraception

Option: Auxiliary nurses inserting and removing IUDs
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to insert and remove IUDs. We are therefore unable to draw any conclusions about the	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	desirable or undesirable effects of this intervention. Indirect evidence: The same systematic review (Polus 2012a) identified two studies from the Philippines and Turkey where IUD insertion by auxiliary nurse midwives was compared with IUD insertion by doctors . These studies show that the use of auxiliary nurse midwives probably leads to little or no difference in expulsion rates,	
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □ □ □	removal rates, continuation rates (moderate certainty evidence). There may also be little or no difference in rates of unintended pregnancies or in referral rates before and after IUD insertion (low certainty evidence). The studies did not assess pain at insertion, insertion failure, and complications at insertion. The review also identified two studies from Brazil and Columbia where IUD insertion by <u>nurses</u> was compared with	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	IUD insertion by <u>doctors</u> . These studies show that the use of nurses may lead to little or no difference in expulsion rates and continuation rates (low certainty evidence), and probably leads to less pain (moderate certainty evidence). We are uncertain about the differences between nurses and doctors for removal rates, rates of unintended pregnancies, and complication rates (very low certainty evidence). Other outcomes show mixed results (low certainty evidence). Annex: pages 58-60 (Polus 2012a – Table 1 and Table 2)	
	• • • • • • • • • • • • • • • • • • • •			
RESOURCE USE	Are the resources required small?	No Probably Uncertain Probably Yes Varies yes □ □ □ □ □ □	Main resource requirements Resource Settings in which auxiliary nurses already provide other care Training Some training for auxiliary nurses to insert and remove an IUD Supervision and monitoring Regular supervision by senior midwife or doctor Supplies IUD, antiseptic solution, insertion equipment Referral This may be needed for a small number of women	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A review of country case studies of task shifting for family planning (Polus 2012b) identified one programme where IUDs were delivered by auxiliary nurses. Overall, the review suggests that recipients appreciate the easy access that community-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (IUDs, antiseptic solution, insertion equipment). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training in IUD insertion and removal and in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses felt that training in IUD insertion was insufficient. The auxiliary nurses also lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012); page 20 (Colvin 2012).	



12.4. RECOMMENDATION:

Should AUXILIARY NURSES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Auxiliary nurses inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
		☑				
	We suggest considering this option with targeted monitoring and evaluation. We suggest using this intervention where: (1) auxiliary nurses are already an established cadre; and (2) a well-functioning referral system is in place or can be put in place					
Justification	There is insufficient evidence on the effectiveness of this inte inequalities by extending care to underserved populations. In					
Implementation	The following should be considered when using auxiliary nurses to insert and remove contraceptive implants:					
considerations	 The distribution of roles and responsibilities between auxiliary rechanges in regulations may be necessary to support any chans Implementation needs to be in the context of a comprehensive not for others may negatively affect the work that is carried out. Referral systems need to function well, i.e. financial, logistical (quality of care at the first referral facility. Supplies need to be secure. Responsibility for supervision needs to be clear and supervision. Because of the sensitivity of sexual and contraceptive issues, powers. It may also be an advantage to ensure that relevant transverse and their supervisors need to receive appropri. Training needs to reinforce that auxiliary nurses should avoid in 	remuneration scheme, in which salaries or incentives reflect any che.g. transport) and relational barriers need to be addressed. Specifion needs to be regular and supportive planners should consider whether health workers promoting or deliv	through regulations and job descriptions ranges in scope of practice. Giving incentives for certain tasks but cally, local health systems need to be strengthened to improve ering reproductive health services to women should also be ipients and in side effects of different contraceptive methods. traception			
Monitoring and evaluation						
Research priorities						



12.4. EVIDENCE BASE:

Should AUXILIARY NURSES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Auxiliary nurses inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes □ □ □ □	A systematic review (Polus 201	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to insert and remove contraceptive implants. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: Another systematic review (Oladapo 2012) assessed the effects of LHWs delivering injectable contraceptives to women of reproductive age. This review identified one study from Uganda in which women received DMPA from lay health workers using 'autodisable' syringes (it was not clear whether this was a CPAD device). It is uncertain whether lay health workers delivering injectable contraceptives improves contraceptive uptake and maintains safety and patient satisfaction because the quality of the evidence from this study is very low	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	planning delivery in low and mi the effects of midlevel provider 2012). However, neither of the insert and remove contraceptiv		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □ □	contraceptives to women of rep DMPA from lay health workers uncertain whether lay health wo		
BEN	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □	Annex: page 15 (Oladapo 2012).		
			Main resource requirements		
ш			Resource	Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training	Some training for auxiliary nurses to insert and remove a contraceptive implant	
SOU	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor	
RE			Supplies	Contraceptive implant, insertion equipment and local anaesthetic	
			Referral	Patients may need to go to a referral centre for removal difficulties	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 33 (Glenton, Khanna 2012); page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (contraceptive implants, insertion equipment, local anaesthetic). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Adequate referral to a higher level of care for further management may be neccesary if removal leads to complications. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012); page 20 (Colvin 2012).	



12.5. RECOMMENDATION:

Should AUXILIARY NURSES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception

Option: Auxiliary nurses performing tubal ligation Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option		
	\square				
	We recommend against the use of auxiliary nurses to perform tubal ligation.				
Justification	There is insufficient evidence on the effectiveness of this int cost-effectiveness, feasibility and acceptability.	tervention. In addition, this procedure is beyond the skills of mo	st auxiliary nurses and there is uncertainty regarding its		
Implementation considerations	Not applicable				
Monitoring and evaluation					
Research priorities					



12.5. EVIDENCE BASE:

Should AUXILIARY NURSES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception

Option: Auxiliary nurses performing tubal ligation Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA J		JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to perform tubal ligation. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □	Indirect evidence: One of these reviews (Polus 2012a) identified one study from Thailand where the effects of postpartum tubal ligation performed by <u>midwives</u> was compared to the same intervention performed by <u>doctors</u> . This study shows that there is little or no difference between midwives and doctors with regard to complications during surgery or postoperative morbidity.	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 62 (Polus 2012a – Table 3)	
			Main resource requirements	
			Resource Settings in which auxiliary nurses already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training Practice-based training in tubal ligation techniques. Auxiliary nurses are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial	
	required small?		Supervision and Regular supervision by senior midwife or doctor monitoring	
			Supplies Surgical instruments, local anaesthetic, suture material, surgical facility / theatre, resuscitation equipment	
			Referral To a referral centre for failed ligations and / or complications	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow auxiliary nurses to perform tubal ligation. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.6. RECOMMENDATION:

Should AUXILIARY NURSES perform vasectomy?

Problem: Poor access to contraception

Option: Auxiliary nurses performing vasectomy
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option			
		☑				
	We suggest considering the option only in the context of rigorous research. Implementation in the context of research should be done where: - auxiliary nurses are already an established cadre - a well-functioning referral system is in place or can be put in place					
	Note: Five members of the panel dissented and indicated that they would prefer to recommend against the option as they considered this procedure to exceed the typical scope of practice of auxiliary nurses					
Justification	There is insufficient evidence on the effectiveness of this intervention. In addition, there is uncertainty regarding its cost-effectiveness, feasibility and acceptability.					
Implementation considerations	Not applicable					
Monitoring and evaluation						
Research priorities	Studies to assess the effects, acceptability and feasibility of	f auxiliary nurses performing vasectomy are needed				



12.6. EVIDENCE BASE:

Should AUXILIARY NURSES perform vasectomy?

Problem: Poor access to contraception

Option: Auxiliary nurses performing vasectomy Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes					
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to perform vasectomy. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	family planning delivery in low and middle income countries. Another systematic review searched for dies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of			
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □ □		ealth care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the fects of using auxiliary nurses to perform vasectomy. We are therefore unable to draw any conclusions			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □					
			Main resource requirements				
			Resource	Settings in which auxiliary nurses already provide other care			
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	r	Practice-based training in vasectomy technique. Auxiliary nurses are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial			
SOU	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor			
R				Surgical instruments, antiseptic solution (vasectomy), suture material, surgical facility / theatre, resuscitation equipment			
			Referral	To a referral centre for failed vasectomies and / or complications			



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, and service fees. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow auxiliary nurses to perform vasectomy. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



2.7. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES distribute misoprostol to women during pregnancy for selfadministration after childbirth?

Problem: Poor access to prevention of postpartum haemorrhage

Option: Auxiliary nurse midwives distributing misoprostol to women during

pregnancy for self-ministration after childbirth

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	No recommendation has been made	We recommend the option
		abla	
	No recommendations have been made for this option.		
Justification	We need research about the effectiveness of distributing misoprostol to women during pregnancy for self-administration after childbirth before considering the cadres that can undertake panel therefore did not make a recommendation. However, it was also noted that this may improve access to misoprostol in some settings.		
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities Studies assessing the effects and the acceptability of auxiliary nurse midwives distributing misoprostol to women during pregnancy for self-haemorrhage		or self-administration after childbirth for prevention of postpartum	



2.7. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES distribute misoprostol to women during pregnancy for self-administration after childbirth?

Problem: Poor access to prevention of postpartum haemorrhage **Option**: Auxiliary nurse midwives distributing misoprostol to women during pregnancy for self-ministration after childbirth **Comparison**: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. In addition, a systematic review assessed the effectiveness and safety of advance misoprostol provision for postpartum haemorrhage prevention and treatment in non-facility births. This review did not identify any	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □		context of research (where reliable data on coverage, safety and health outcomes can be collected) (WHO, 2012).
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurse midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training 1-2 weeks of practice-based training in safe delivery and in communication and health promotion skills.	
OUR	required small?	no yes	Supervision and monitoring Regular supervision by midwife or nurse	
RES	Silidii !	1	Supplies Misoprostol tablets, robust supply chain, printed information for pregnant women and their families	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: • Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). • Some LHWs voiced concerns about possible social or legal consequences if something went wrong following the administration of drugs. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	The intervention is relatively simple to deliver as all pregnant women would be eligible to receive misoprostol and the auxiliary nurse does not have to be present at the time of delivery. Some additional work would be needed to add this intervention to the existing tasks of auxiliary nurse midwives. It is likely to require changes in regulations; and significant changes to drug supplies and training. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). For a range of issues (no evidence on misoprostol specifically), the review of lay health workers suggests that counselling and communication was perceived as important but as a complex task for which they sometimes felt unprepared and for which they requested specific training (moderate certainty evidence). However, trainers were not necessarily competent to train them in these skills (low certainty evidence) (Glenton, Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



4.1. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM **Option**: Auxiliary nurse midwives delivering injectable antibiotics **Comparison**: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
	We suggest considering the option in the context of rigorous reservant functioning referral system is in place or can be put in place.	arch. We suggest evaluating this intervention where auxiliary nurse r	nidwives are already an established cadre and where a well-
Justification	There is insufficient evidence on the effectiveness of auxiliary nurse midwives diagnosing preterm pre-labour rupture of membranes (PROM) and delivering initial treatment of injectable antibiotics using a standard syringe before referral. Possible harms include the overuse of antibiotics and misdiagnosis. Possible benefits include earlier access to treatment for preterm PROM, but it is unclear whether slightly earlier treatment, prior to referral, would have benefits. This intervention may be acceptable and feasible and may reduce inequalities by extending care to underserved populations.		
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies assessing the effects and the acceptability of using auxili	ary nurse midwives to delivering an initial dose of injectable antibiotic	es to treat preterm PROM prior to referral.



4.1 EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM **Option:** Auxiliary nurse midwives delivering injectable antibiotics **Comparison:** Care delivered by other cadres or no care **Setting:** Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □				
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any			
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence □ □ □ □ ☑ □	studies that assessed the effec	udies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable draw any conclusions about the desirable or undesirable effects of this intervention.		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes				
			Main resource requirements			
			Resource	Settings in which auxiliary nurse midwives already provide other care		
RESOURCE USE	Are the resources required small?	No Probably Uncertain Probably Yes Varies no yes	Training	e.g. two weeks of training for auxiliary nurse midwives to diagnosis and manage, including diagnosis of amniotic fluid volume by ultrasound where available. This assumes proficiency in diagnosing pregnancy, assessing gestational age, and assessing leakage of amniotic fluid through observation and simple pH testing		
RES	.,		Supervision and monitoring	Regular supervision by a midwife or doctor		
			Supplies	Antibiotics, equipment needed for diagnosis, e.g. litmus paper. Ultrasound equipment in some settings		
			Referral	Transportation, adequate referral centre		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibility for patient care (low certainty evidence). Also, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (antibiotics and simple diagnostic tools). In addition, it is simple to deliver and requires only a relatively small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurse midwives to prescribe and deliver injectable antibiotics. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



7.1 and 7.2. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES (a) initiate and (b) maintain kangaroo mother care for low birth weight infants?

Problem: Low utilisation of kangaroo mother care for low birth weight infants **Option**: Auxiliary nurse midwives initiating and maintaining kangaroo mother

Comparison: Usual care

Setting: Community/primary health care settings in LMICs

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		$\overline{\mathbf{C}}$	
	We suggest considering the option with targeted monitoring	ng and evaluation. We suggest using this intervention where a	auxiliary nurse midwives are already an established cadre.
Justification	may have important benefits and is probably feasible and	sibility of auxiliary nurse midwives initiating kangaroo mother acceptable. It may also reduce inequalities by extending care ation, with particular attention given to different birthweight sub	to underserved populations. We therefore suggest
Implementation considerations	entation The following should be considered when using auxiliary nurse midwives to initiate and maintain kangaroo mother care:		ture acceptability among affected health workers the programme design clear, including through regulations and job descriptions wes reflect any changes in scope of practice. Giving incentives
Monitoring and evaluation	Monitoring and evaluation should focus on different weight	t categories to ensure that babies with birth weight less than 1	500 grams are not adversely affected.
Research priorities			



7.1 and 7.2. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES (a) initiate and (b) maintain kangaroo mother care for low birth weight infants?

Problem: Low utilisation of kangaroo mother care for low birth weight

infant

Option: Auxiliary nurse midwives initiating and maintaining kangaroo

mother care

Comparison: Usual care

Setting: Community/primary health care settings in LMICs

CRITERIA JUDGEMENT EVIDENCE			COMMENTS AND QUERIES			
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	nurse midwives, in improving the	for studies that assessed the effects of midlevel providers, including auxiliary ne delivery of health care services (Lassi 2012). However, this review did not	Although direct evidence on effects is lacking, there is some evidence that lay health workers can deliver this intervention, it is simple to implement, is likely to have benefits and is not likely to have significant	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		dentify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. undesirable effects. We have therefore judged the desirable effects as probably large relative to the undesirable effects.	judged the desirable effects as probably	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct ovidence low □ □ □ □ □ □ □ □ □	A systematic review of the effects of lay health workers (Lewin 2012) identified three trials from Bangladesh and India that assessed the effectiveness of promotion of kangaroo care or skin-to-skin care after birth, although promotion was not specifically targeted at low birth weight babies. In two of the trials, LHWs promoted the intervention as part of a package of maternal and newborn care while, in one study, LHWs taught kangaroo care to expectant mothers and their families. One trial suggests that the intervention	systematic review of the effects of lay health workers (Lewin 2012) identified three trials from Bangladesh nd India that assessed the effectiveness of promotion of kangaroo care or skin-to-skin care after birth, Ithough promotion was not specifically targeted at low birth weight babies. In two of the trials, LHWs romoted the intervention as part of a package of maternal and newborn care while, in one study, LHWs		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	care (moderate certainty evider care may reduce neonatal mor	are (moderate certainty evidence). Two trials suggest that the overall package of maternal and newborn are may reduce neonatal mortality (low certainty evidence) unnex: page13 (Lewin 2012 – Table 4)		
			Main resource requirements			
			Resource	Settings in which auxiliary nurse midwives already provide other care		
USE	Are the	No Probably Uncertain Probably Yes Varies	Training	Training in the technique is necessary and may take 1-2 weeks		
URCE	resources required	no yes	Supervision and monitoring	Regular supervision by an experienced kangaroo care practitioner		
RESOURCE USE	small?		Supplies	Minimal: promotional and demonstrational materials; carrying pouches for babies		
			Referral	To a health facility if any health problems are detected		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Although there is no direct evidence on effectiveness, the benefits are likely to be large in relation to the incremental costs	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ ☑ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggest that: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Recipients may prefer nurses, compared to doctors, for issues that require more attention and time (low certainty evidence) Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ ☑ □	The intervention is relatively simple, requires no supplies and is unlikely to require changes to norms or regulations. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary. Systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



8.1. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES deliver injectable antibiotics for neonatal sepsis, using a standard syringe?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurse midwives delivering injectable antibiotics for neonatal

sepsis

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
	We suggest considering this option in the context of rigorous rese functioning referral system is in place or can be put in place.	earch. We suggest evaluating this intervention where auxiliary nurse	midwives are already an established cadre and where a well-
Justification		se midwives delivering injectable antibiotics for neonatal sepsis usin xtending care to underserved populations. Also, giving intramuscular	
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies are needed to assess the effects of using auxiliary nurse	midwives to make a diagnosis and deliver injectable antibiotics for n	neonatal sepsis



8.1 EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES deliver injectable antibiotics for neonatal sepsis, using a standard syringe?

Problem: Poor access to treatment for neonatal sepsis **Option**: Auxiliary nurse midwives delivering injectable

antibiotics for neonatal sepsis

Comparison: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to health professionals

CRITERIA **JUDGEMENT EVIDENCE COMMENTS AND QUERIES** Are the anticipated Probably Uncertain Probably Yes Varies desirable effects large? $\overline{\mathbf{A}}$ A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this OF THE OPTIONS review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this Are the anticipated Probably Uncertain Probably Varies intervention. We are therefore unable to draw any conclusions about the desirable or No undesirable effects undesirable effects of this intervention. $\overline{\mathbf{A}}$ small? Indirect evidence: A systematic review of the effects of lay health workers (Lewin 2012) identified a number of trials from HARMS What is the certainty No direct Varies Very Moderate High LMIC settings where packages of care were delivered by LHWs. In one trial, the package included evidence of the anticipated LHWs injecting procaine penicillin and gentamicin to treat sick neonates, apparently using a standard $\sqrt{}$ BENEFITS & effects? syringe. The trial did not report any adverse effects of LHWs using injectable antibiotics. Overall, the trials suggest that these packages of care may lead to a reduction in neonatal mortality (moderate certainty evidence) and child mortality (low certainty evidence). Are the desirable Probably Uncertain Probably Yes Varies Annex: page 10 (Lewin 2012 – Table 2) effects large relative No to the undesirable $\overline{\mathbf{A}}$ effects? Main resource requirements Settings in which auxiliary nurse midwives already provide other Resource 1-2 weeks of practice-based training in injection techniques, in diagnosit Training Probably Uncertain Probably Yes Varies and managing neontal sepsis RESOURCE Are the resources required small? Supervision and monitoring Regular supervision by midwife or nurse $\mathbf{\Lambda}$ Antibiotics, syringes, sterile solution, robust supply chain Supplies Referral Transportation, adequate referral centre offering neonatal care



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012) Recipients, LHWs and other health workers may find the delivery of drugs and vaccines, including antibiotics for neonatal sepsis, by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012) Activities that demand that the LHW is present at specific times may lead to changes in working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012) Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Significant additional work may be required to add the intervention to the tasks of auxiliary nurse midwives. It is likely to require changes in regulations; significant changes to drug supplies and training; and validation of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



8.2. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES deliver antibiotics for neonatal sepsis, using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurse midwives delivering antibiotics for neonatal sepsis

using CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
		\square	
We suggest considering this option in the context of rigorous research. We suggest evaluating this intervention where auxiliary nurse midwives are already an established cadre, v protocols are available and where a well-functioning referral system is in place or can be put in place.			
Justification		se midwives delivering antibiotics for neonatal sepsis using a CPAD erserved populations. Also, giving intramuscular and intravenous injury.	
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies are needed to assess the effects and the acceptability of	using auxiliary nurse midwives to diagnose sepsis and deliver inject	able antibiotics for neonatal sepsis using a CPAD



8.2. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES deliver antibiotics for neonatal sepsis, using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to treatment for neonatal sepsis

Option: Auxiliary nurse midwives delivering antibiotics for neonatal

sepsis using CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence □ □ □ □ □ □	Indirect evidence: A systematic review of the effects of <u>lay health workers</u> (Lewin 2012) identified a number of trials from LMIC settings where packages of care were delivered by LHWs. In one trial, the package included LHWs injecting procaine penicillin and gentamicin to treat sick neonates, apparently using a standard syringe. The trial did not report any adverse effects of LHWs using injectable antibiotics. Overall, the trials suggest that these packages of care may lead to a reduction in neonatal mortality (moderate certainty evidence) and	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	child mortality (low certainty evidence). Annex: page 10 (Lewin 2012 – Table 2)	
			Main resource requirements	
SE			Resource Settings in which auxiliary nurse midwives already provide other care	
URCE U	Are the resources required	No Probably Uncertain Probably Yes Varies no yes	Training 1-2 weeks of practice-based training in injection techniques and in diagnosing and managing neontal sepsis	
RESO	small?		Supervision and monitoring Regular supervision by midwife or nurse	
_			Supplies Antibiotic CPAD, sterile solution, robust supply chain	
			Referral Transportation, adequate referral centre offering neonatal care	
RESOURCE USE	resources required		diagnosing and managing neontal sepsis Supervision and monitoring Regular supervision by midwife or nurse Supplies Antibiotic CPAD, sterile solution, robust supply chain	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Recipients, LHWs and other health workers may find the delivery of drugs and vaccines, including antibiotics for neonatal sepsis, by LHWs through compact prefilled autodisable devices (CPADs) such as Uniject to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Activities that demand that the LHW is present at specific times may lead to changes in working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	Significant additional work may be required to add the intervention to the tasks of auxiliary nurse midwives. It is likely to require changes in regulations; significant changes to drug supplies and training; and validation of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



9.1. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES deliver neonatal resuscitation?

Problem: Poor access to neonatal care

Option: Auxiliary nurse midwives delivering neonatal resuscitation
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
			lacktriangledown
	We recommend this option. We suggest implementing this intervention be put in place.	on where auxiliary nurse midwives are already an established ca	dre and where a well-functioning referral system is in place or can
Justification	There is insufficient evidence on the effectiveness of auxiliary nurse acceptable, is probably feasible and may reduce inequalities by exte		ention is part of the core skills of skilled birth attendants, is probably
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies are needed to assess the effects and the acceptability of usi	ng auxiliary nurse midwives to deliver neonatal resuscitation	



9.1. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES deliver neonatal resuscitation?

Problem: Poor access to neonatal care

Option: Auxiliary nurse midwives delivering neonatal resuscitation Comparison: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct varies evidence □ □ □ □ □ □ □		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □		
			Main resource requirements	
			Resource Settings in which auxiliary nurse midwives already provide other care	
JSE	Are the		Training 1-2 days of practice-based training in neonatal resuscitation	
RESOURCE USE	resources	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by midwife or nurse	
SOU	required small?		Supplies Resuscitation bag and mask	
RE			Referral Transportation, adequate referral centre offering neonatal care	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: Three systematic reviews (Glenton, Khanna 2012; Glenton, Colvin 2012, Rashidian 2012) explored factors that influence the success of task-shifting to lay health workers and nurses. These reviews suggest that the acceptability of such programmes to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) (Rashidian 2012). Recipients, LHWs and other health workers may find the delivery of drugs and vaccines by LHWs to be acceptable, although the importance of training and supervision is emphasised (low certainty evidence). Some LHWs voiced concerns about possible social or legal consequences if something went wrong. These concerns were at least partly addressed through support and supervision (low certainty evidence) (Glenton, Khanna 2012). Activities that demand that the LHW is present at specific times, for instance during labour and birth, lead to irregular and unpredictable working conditions. At least one study shows that this may have direct implications for LHWs' expectations regarding incentives (low certainty evidence) (Glenton, Colvin 2012). Annex: page 33 (Glenton, Khanna 2012); page 26 (Glenton, Colvin 2012); page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	Significant additional work may be required to add the intervention to the tasks of auxiliary nurse midwives. It is likely to need changes in regulations; significant changes to supplies and training; and development of appropriate treatment algorithms. Also, implementation would require access to a referral system with trained and equipped healthcare professionals and facilities. Significant training and supervision provided by skilled health cadres would likely be needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Colvin 2012; Rashidian 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.1, 11.2 and 11.3. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES (a) administer intravenous fluid for resuscitation as part of postpartum haemorrhage treatment, (b) perform internal bimanual uterine compression for postpartum hameorrhage, and (c) perform suturing for minor perineal / genital lacerations?

Problem: Poor access to treatment for post-partum haemorrhage

Option: Auxiliary nurse midwives delivering a range of interventions to treat

haemorrhage

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
			\square
		interventions where auxiliary nurse midwives are already an establish ed in the context of the WHO PPH guidelines, which outline a compre	
Justification		urse midwives delivering these interventions. However, the panel con- oly feasible and may also reduce inequalities by extending care to un	
Implementation considerations	The following should be considered when using auxiliary nurse midwives to (a) administer intravenous fluid for resuscitation, (b) perform internal bimanual uterine compression, and (c) suture genital lacerations:		
	 The distribution of roles and responsibilities between Changes in regulations may be necessary to suppor Implementation needs to be in the context of a comp tasks but not for others may negatively affect the wo 	logistical (e.g. transport) and relational barriers need to be addressed secure supervision needs to be regular and supportive	e clear, including through regulations and job descriptions ct any changes in scope of practice. Giving incentives for certain
Monitoring and evaluation	-		
Research priorities	-		



11.1, 11.2 and 11.3. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES (a) administer intravenous fluid for resuscitation as part of postpartum haemorrhage treatment, (b) perform internal bimanual uterine compression for postpartum haemorrhage, and (c) perform suturing for minor perineal / genital lacerations?

Problem: Poor access to treatment for post-partum haemorrhage

Option: Auxiliary nurse midwives delivering a range of interventions to treat

haemorrhage

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

CRITERIA JUDGEMENT		EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes		A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary		
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □ □	nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not dentify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are herefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □			
			Main resource requirements		
SE			Resource	Settings in which auxiliary nurse midwives already provide other care	
CE U	Are the resources	No Probably Uncertain Probably Yes Varies No yes	Training	3-4 weeks training in emergency obstetric care	
RESOURCE USE	required small?		Supervision and monitoring	Regular supervision by midwife or nurse	
RE	Jiiiuii i	·	Supplies	IV fluids and sets, sutures, antiseptic solution	
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
	i i		i		i e



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies No yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies No yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: One systematic review (Rashidian 2012) explored factors that influence the success of task-shifting to nurses. This review suggests that: Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence) Nurses themselves may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctor acceptance appears to be influenced by level of nurse experience (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies No yes	These interventions require some supplies. Adequate referral to a higher level of care for further management may be necessary. In addition, these interventions are likely to require changes to norms or regulations. Some training and supervision is needed. However, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.4. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES administer antihypertensives for severe high blood pressure in pregnancy?

Problem: Poor access to treatment

Option: Auxiliary nurse midwives administering antihypertensives for severe

high blood pressure during pregnancy

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		\square	
We suggest considering the option with targeted monitoring and evaluation. We suggest evaluating this intervention where auxiliary nurse midwives are already an established cadre; in an apprior to referral; and where following a standard protocol.			nurse midwives are already an established cadre; in an acute context
Justification	There is insufficient evidence on the effectiveness of auxiliary nurse midwives administering these drugs. However, this is probably acceptable, and they have the necessary clinical skills. The intervention may also reduce inequalities in settings where access to more highly trained providers is limited.		
Implementation considerations	The following should be considered when using auxiliary nurse midwives to (a) administer intravenous fluid for resuscitation, (b) perform internal bimanual uterine compression, and (c) suture genital lacerations:		
	 The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between auxiliary nurse midwives and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in auxiliary nurse midwives' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain 		
	improve quality of care at the first referral facility	ogistical (e.g. transport) and relational barriers need to be addressed	d. Specifically, local health systems need to be strengthened to
	 Supplies of drugs and other commodities need to be s Responsibility for supervision needs to be clear and si 		
	- Auxiliary nurse midwives and their supervisors need to	o receive appropriate initial and ongoing training	
Monitoring and evaluation	ng and evaluation Monitoring and evaluation should focus on adherence to clinical protocols and potential harms of antihypertensives on the mother and the baby.		
Research priorities	- Studies assessing the effects and the acceptability of using auxiliary nurse midwives to administer (a) antihypertensives for high blood pressure and (b) corticosteroids to p women are needed		



11.4. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES administer antihypertensives for severe high blood pressure in pregnancy

Problem: Poor access to treatment

Option: Auxiliary nurse midwives administering antihypertensives for severe

high blood pressure during pregnancy

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

CRITERIA JUDGEMENT		EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes			
은	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this		A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.
& HARMS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies yes			
			Main resource requirements		
			Resource	Settings in which auxiliary nurse midwives already provide other care	
SCE	racourcae		Training	E.g. 2 weeks of practice-based training in diagnosing and managing hypertension in pregnancy	
SOU	required small?		Supervision and monitoring	Regular supervision by midwife or doctor	
R			Supplies	Antihypertensives, blood pressure measurement device	
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibilities in relation to other health workers may be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. While training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurse midwives to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.5. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES administer corticosteroids to pregnant womenin the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Auxiliary nurse midwives administering corticosteroids to pregnant

women in the context of preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option in the context of rigorous research	We recommend the option
		Ø	
	We suggest considering the option in the context of rigorous rese functioning referral system is in place or can be put in place.	earch. We suggest evaluating this intervention where auxiliary nurse	midwives are already an established cadre and where a well-
Justification		rse midwives administering corticosteroids to pregnant women for the machine labour and for the administration of this drug and the intervention	
Implementation considerations	Not applicable		
Monitoring and evaluation	-		
Research priorities	- Studies assessing the effects and the acceptability of	using auxiliary nurse midwives to administer corticosteroids to pregr	nant women are needed



11.5. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Auxiliary nurse midwives administering corticosteroids to pregnant

women in the context of preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □	nurse midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using auxiliary nurse midwives for this intervention. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
			Main resource requirements	
			Resource Settings in which auxiliary nurse midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training E.g. 2 weeks of practice-based training in diagnosing and managing preterm labour	
SOU	required small?		Supervision and monitoring Regular supervision by midwife or doctor	
Ŗ			Supplies Corticosteroids	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibility for patient care (low certainty evidence). Also, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence). Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. While training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurse midwives to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.12. RECOMMENDATIONS:

Should AUXILIARY NURSE MIDWIVES deliver magnesium sulphate to women in preterm labour as a neuroprotection for the foetus?

Problem: Poor access to medical management of preterm birth

Option: Auxiliary nurse midwives delivering magnesium sulphate for preterm

labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option			
		\square				
	We suggest considering the option in the context of rigorous resear functioning referral system is in place or can be put in place.	arch. We suggest evaluating this intervention where auxiliary nurse	midwives are already an established cadre and where a well-			
Justification	There is insufficient evidence on the effectiveness of auxiliary nurse midwives delivering magnesium sulphate to women in preterm labour as a neuroprotective for the foetus. However, auxiliary nurse midwives have the necessary clinical skills for diagnosis of preterm labour and for the administration of this drug and the intervention may be acceptable and feasible.					
Implementation considerations	Not applicable					
Monitoring and evaluation						
Research priorities	Studies are needed of the effects and the acceptability of midwive	es delivering magnesium sulphate and / or corticosteroids for womer	at risk of preterm birth.			



11.12. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES deliver magnesium sulphate to women in preterm labour as a neuroprotection for the foetus?

Problem: Poor access to medical management of preterm birth Option: Auxiliary nurse midwives delivering magnesium sulphate for preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A cyctomatic review coarched	for studies that assessed the effects of midlevel providers, including auxiliary		
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	nurse midwives, in improving the identify any studies that assess women in preterm labour. We a	urse midwives, in improving the delivery of health care services (Lassi 2012). However, the review did not dentify any studies that assessed the effects of auxiliary nurse midwives delivering magnesium sulphate for yomen in preterm labour. We are therefore unable to draw any conclusions about the desirable or indesirable effects of this intervention.		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □	Indirect evidence: The review (Lassi 2012) did identify a number of other studies, all from high income settings, in which midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008)			
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 4 (Lassi 2012)			
			Main resource requirements			
			Resource	Settings in which auxiliary nurse midwives already provide other care		
RESOURCE USE	Are the resources required	No Probably Uncertain Probably Yes Varies no yes	Training	E.g. less than 1 week of training for midwives to diagnosis pre-term labour, gestational age and, for magnesium sulphate, be given skills to safely administer and monitor treatment		
RESO	small?		Supervision and monitoring	Regular supervision by senior midwife or doctor		
			Supplies	Magnesium sulphate, IV equipment		
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening than doctors (moderate certainty evidence), but may prefer doctors for some medical tasks (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence) and may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, doctors and other health workers may be unwilling to relinquish final responsibility for patient care (low certainty evidence). Also, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence).	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (magnesium sulphate and to IV equipment). In addition, it is simple to deliver. The intervention requires some training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In some settings, changes to norms or regulations may be needed to allow midwives to prescribe and deliver magnesium sulphate. Annex: page 20 (Colvin 2012)	



12.1. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES initiate and maintain injectable contraceptives using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable contraceptives

using a CPAD

Comparison: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	No recommendation made	We recommend the option
	No recommendation was made for this option.		
Justification		ectable contraceptives using a compact, prefilled, autodisable ake a recommendation. It was also noted that studies on this	device (CPAD) such as Uniject before considering the cadres question are underway.
Implementation considerations	Not applicable		
Monitoring and evaluation	Not applicable		
Research priorities	Not applicable		
			



12.1. EVIDENCE BASE:

Should AUXILIARY NURSES initiate and maintain injectable contraceptives using a compact, prefilled, autodisable device (CPAD) such as Uniject?

Problem: Poor access to contraception

Option: Auxiliary nurses initiating and maintaining injectable

contraceptives using a CPAD

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 2012). Neither of these reviews identified any studies that assessed the effects of using auxiliary nurses to deliver injectable contraceptives using a CPAD device. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: Another systematic review (Oladapo 2012) assessed the effects of LHWs delivering injectable contraceptives to women of reproductive age. This review identified one study from Uganda in which women received DMPA from LHWs using 'autodisable' syringes (it was not clear whether this was a CPAD device). It is uncertain whether LHWs delivering injectable contraceptives improves contraceptive uptake and maintains safety and patient satisfaction because the quality of the evidence from this study is very low. Annex: page 15 (Oladapo 2012)			
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes				
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence				
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □				
			Main resource requirements		While the costs of CPAD devices	
JSE	Are the		Resource	Settings in which auxiliary nurses already provide other care	are currently higher than standard syringe, these costs may decrease	
RESOURCE USE	resources required	10 yes	Training	1-2 weeks of practice-based training in injection techniques and in contraceptive methods and promotion	as production volumes increase.	
RES	small?		Supervision and monitoring	Regular supervision by midwife or nurse		
			Supplies	Contraceptive CPAD, sterile solution, robust supply chain		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (contraceptive CPAD, sterile solution). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.2. RECOMMENDATIONS:

Should AUXILIARY NURSE MIDWIVES initiate and maintain injectable contraceptives using a standard syringe?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives initiating and maintaining injectable

contraceptives using a standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option		
			\square		
	We recommend the use of auxiliary nurse midwives to deli-	ver injectable contraceptives using a standard syringe.			
Justification		ntervention. However, this intervention may be a cost-effective ery of injections is part of auxiliary nurse midwife practice in a			
Implementation considerations	 The relevant professional bodies should be involved in the pingle The distribution of roles and responsibilities between auxiliars. Changes in regulations may be necessary to support any changes in regulations may be necessary to support any change in the context of a comprehension not for others may negatively affect the work that is carried of Supplies need to be secure. Responsibility for supervision needs to be clear and supervison Because of the sensitivity of sexual and contraceptive issues women. It may also be an advantage to ensure that relevant Auxiliary nurse midwives and their supervisors need to recein methods. Training needs to reinforce that auxiliary nurses should be involved in the pingle point in the	·			
Monitoring and evaluation	Implementation should include monitoring of the	standard of counseling on contraceptive choices.			
Research priorities					



12.2. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES initiate and maintain injectable contraceptives using a standard syringe?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives initiating and maintaining injectable

contraceptives using a standard syringe

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

Are the anticipated No Probably Uncertain Probably Yes Varies	
desirable effects large?	
Are the anticipated undesirable effects small? Are the anticipated undesirable effects of undesirable effects of undesirable of the small? Are the anticipated undesirable effects of undesirable effects of undesirable of the small? Are the anticipated undesirable effects of undesirable of the small? Are the anticipated undesirable of the small? A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). Neither of these reviews identified any studies that assessed the effects of using a uxiliary nurse midwives to deliver injectable contraceptives using a standard syringe. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
What is the certainty of the anticipated effects? What is the certainty of the anticipated effects? What is the certainty of the anticipated effects? Wery Low Moderate High No direct evidence: Another systematic review (Oladapo 2012) assessed the effects of LHWs delivering injectable contraceptives to women of reproductive age. This review identified one study from Uganda in which women received DMPA from LHWs using 'autodisable' syringes (it was not clear whether this was a CPAD device). It is uncertain whether LHWs delivering injectable contraceptives improves contraceptive uptake and maintains safety	
Are the desirable effects large relative to the undesirable effects? Are the desirable effects? Are the desirable effects? Annex: page 15 (Oladapo 2012) Annex: page 15 (Oladapo 2012)	
Main resource requirements	
Are the No Probably Uncertain Probably Yes Varies Resource Settings in which auxiliary nurse midwives already provide other care	
Are the resources required small? No Probably Uncertain Probably Yes Varies Training 1-2 weeks of practice-based training in injection techniques and in contraceptive methods and promotion Supervision and monitoring. Regular supervision by midwife or purse	
Supervision and monitoring Regular supervision by midwife or nurse	
Supplies Injectable contraceptives, syringes, sterile solution, robust supply chain	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning, a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (injectable contraceptives, syringes, sterile solution). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that <u>auxiliary nurses</u> lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.3. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES insert and remove intrauterine device (IUDs)?

Problem: Poor access to contraception **Option**: Auxiliary nurse midwives inserting and removing IUDs **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
	We recommend the use of auxiliary nurse midwives to insert and r	emove IUDs. This intervention may be used where auxiliary nurse mid	dwives are already an established cadre.
Justification	This intervention is probably effective and may have few undesirab populations.	ole effects. It may also be cost-effective, feasible and acceptable, and	may reduce inequalities by extending care to underserved
Implementation considerations	The following should be considered when using auxiliary nurse mid	dwives to insert and remove IUDs:	
	 The distribution of roles and responsibilities between auxiliary Changes in regulations may be necessary to support any change in regulations may be necessary to support any change in the context of a comprehensive not for others may negatively affect the work that is carried outon referral systems need to function well, i.e. financial, logistical quality of care at the first referral facility Supplies need to be secure Responsibility for supervision needs to be clear and supervision Because of the sensitivity of sexual and contraceptive issues, women. It may also be an advantage to ensure that relevant to Auxiliary nurse midwives and their supervisors need to receive methods. Training needs to reinforce that auxiliary nurses shown 	e remuneration scheme, in which salaries or incentives reflect any charter (e.g. transport) and relational barriers need to be addressed. Specific on needs to be regular and supportive planners should consider whether health workers promoting or deliver	hrough regulations and job descriptions anges in scope of practice. Giving incentives for certain tasks but cally, local health systems need to be strengthened to improve ering reproductive health services to women should also be with recipients and in side effects of different contraceptive ceive contraception
Monitoring and evaluation			
Research priorities			



12.3. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES insert and remove intrauterine device (IUDs)?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives inserting and removing IUDs

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning lelivery in low and middle income countries. The review identified two studies from the Philippines and Turkey where IUD insertion by auxiliary nurse midwives was compared with IUD insertion by doctors. These studies show that the use of auxiliary nurse midwives probably leads to little or no difference in expulsion rates, removal rates, continuation rates (moderate certainty evidence). There may also be little or no difference in rates of unintended pregnancies or in referral rates before and after IUD			
NS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	Outcomes	. The studies did not assess pain at insertion, inser Impacts	Certainty of the anticipated effect	
OPTIC	What is the		Expulsion rates	Probably little or no difference between auxiliary nurse midwives and doctors	⊕⊕⊕⊖ Moderate	
ОF ТНЕ	certainty of the	Very Low Moderate High No direct Varies	Removal rates	Probably little or no difference between auxiliary nurse midwives and doctors	⊕⊕⊕○ Moderate	
HARMS	anticipated effects?		Unintended pregnancies	May be little or no difference between auxiliary nurse midwives and doctors	⊕⊕○○ Low	
BENEFITS & HARMS OF THE OPTIONS		Continuation rates	Probably little or no difference between auxiliary nurse midwives and doctors	⊕⊕⊕○ Moderate		
BEN	Are the desirable effects large	No Probably Uncertain Probably Yes Varies	Referrals before and after IUD insertion	May be little or no difference between auxiliary nurses and doctors	⊕⊕○○ Low	
	relative to the undesirable effects?		Pain at insertion, insertion failure, and complications at insertion	Not assessed		
			Annex : page 60 (Polus 2012a –	Table 2)		
			Main resource requirements			
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies		Settings in which auxiliary nurse midwives alre care	ady provide other	
OURC	required	no yes	Training	Some training for auxiliary nurse midwives to inser	t and remove an IUD	
RES	small?	, _	Supervision and monitoring	Regular supervision by senior midwife or doctor		
	_		Supplies	IUD, antiseptic solution, insertion equipment		



			Referral This may be needed for a small number of women	
	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes		
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 33 (Glenton, Khanna 2012); page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (IUDs, insertion equipment and antiseptic solution). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Adequate referral to a higher level of care for further management may be neccesary if removal leads to complications. Training, including in insertion and removal of IUDs and in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.4. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES insert and remove contraceptive implants?

Problem: Poor access to contraception **Option**: Auxiliary nurse midwives inserting and removing contraceptive

implants

Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		Ø	
We suggest considering the option with targeted monitoring and evaluation. We suggest using this intervention where auxiliary nurse midwives are already an established referral system is in place or can be put in place.			nidwives are already an established cadre and a well-functioning
Justification	There is insufficient evidence on the effectiveness of this interven care to underserved populations. In addition, this intervention wou	tion. However, this intervention may be a cost-effective, feasible and auld require relatively few additional skills.	acceptable approach and may reduce inequalities by extending
Implementation considerations	 The distribution of roles and responsibilities between auxiliar Changes in regulations may be necessary to support any chall implementation needs to be in the context of a comprehension not for others may negatively affect the work that is carried on Referral systems need to function well, i.e. financial, logistical quality of care at the first referral facility Supplies need to be secure Responsibility for supervision needs to be clear and supervisors. Because of the sensitivity of sexual and contraceptive issues women. It may also be an advantage to ensure that relevant. Auxiliary nurse midwives and their supervisors need to receive methods. Training needs to reinforce that auxiliary nurses she 	lanning and implementation of the intervention to ensure acceptability y nurses and other health workers needs to be made clear, including tanges in auxiliary nurses' scope of practice we remuneration scheme, in which salaries or incentives reflect any chut al (e.g. transport) and relational barriers need to be addressed. Specification needs to be regular and supportive splanners should consider whether health workers promoting or delivered.	hrough regulations and job descriptions anges in scope of practice. Giving incentives for certain tasks but cally, local health systems need to be strengthened to improve ering reproductive health services to women should also be with recipients and in side effects of different contraceptive ceive contraception
Monitoring and evaluation			
Research priorities			



12.4. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives inserting and removing contraceptive

implants

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes	planning delivery in low and middle income cour the effects of midlevel providers, including auxili 2012). However, neither of these reviews identif	systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family lanning delivery in low and middle income countries. Another systematic review searched for studies that assessed ne effects of midlevel providers, including auxiliary nurses, in improving the delivery of health care services (Lassi 012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurse		
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	desirable or undesirable effects of this interval indirect evidence: One of these reviews (Polus	dwives to insert and remove contraceptive implants. We are therefore unable to draw any conclusions about the sirable or undesirable effects of this intervention. direct evidence: One of these reviews (Polus 2012a) identified two studies from the Philippines and Turkey where D insertion by auxiliary nurse midwives was compared with IUD insertion by doctors. These studies show that the		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □	se of auxiliary nurse midwives probably leads to little or no difference in expulsion rates, removal rates, continuation ates (moderate certainty evidence). There may also be little or no difference in rates of unintended pregnancies or in eferral rates before and after IUD insertion (low certainty evidence). The studies did not assess pain at insertion, asertion failure, and complications at insertion. Another systematic review (Oladapo 2012) assessed the effects of lay health workers delivering injectable			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	contraceptives to women of reproductive age. This review identified one study from Uganda in which women received DMPA from lay health workers using 'autodisable' syringes (it was not clear whether this was a CPAD device). It is uncertain whether lay health workers delivering injectable contraceptives improves contraceptive uptake and maintains safety and patient satisfaction because the quality of the evidence from this study is very low. Annex: page 60 (Polus 2012a – Table 2); page 15 (Oladapo 2012)			
			Main resource requirements			
			Resource Settings in who care	nich auxiliary nurse midwives already provide other		
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training Some training contraceptive i	for auxiliary nurse midwives to insert and remove a mplant		
SOU	required small?		Supervision and monitoring Regular super	vision by senior midwife or doctor		
R			Supplies Contraceptive disposal	implant, insertion equipment and local anaesthetic, sharps		
			Referral Patients may r	eed to go to a referral centre for removal difficulties		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based or home-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 33 (Glenton, Khanna 2012); page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (contraceptive implants, insertion equipment, local anaesthetic). However, changes to drug supplies may be needed and the intervention is also likely to require changes to norms or regulations. Training, including in communication about family planning, and supervision is necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that <u>auxiliary nurses</u> lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Adequate referral to a higher level of care for further management may be neccesary if removal leads to complications.	



12.5. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives performing tubal ligation **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
	lacktriangledown		
	We recommend against the use of nurses to perform tubal li	gation.	
Justification	There is insufficient evidence on the effectiveness of this interegarding its acceptability, feasibility and cost-effectiveness.	ervention. In addition, this procedure is beyond the skills of mo	st auxiliary nurse midwives and there is uncertainty
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities			



12.5. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives performing tubal ligation Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary purse midwives, in improving the delivery of health care services.	
Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	(Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurse midwives to perform tubal ligation. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence □ □ □ □ □ □ □	postpartumtubal ligation performed by <u>midwives</u> was compared to the same intervention performed by <u>doctors</u> . This study shows that there is little or no difference between midwives and doctors with regard to complications during surgery or postoperative morbidity. Annex: page 62 (Polus 2012a – Table 3)	
Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes		
		Main resource requirements	
		Resource Settings in which auxiliary nurse midwives already provide other care	
Are the resources	No Probably Uncertain Probably Yes Varies	Training Practice-based training in tubal ligation techniques. Auxiliary nurse midwives are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial	
required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
		Supplies Surgical instruments, local anaesthetic, suture material, surgical facility / theatre, resuscitation equipment	
		Referral To a referral centre for failed ligations and / or complications	
	Are the anticipated desirable effects large? Are the anticipated undesirable effects small? What is the certainty of the anticipated effects? Are the desirable effects large relative to the undesirable effects? Are the desirable effects?	Are the anticipated desirable effects large? Are the anticipated undesirable effects small? What is the certainty of the anticipated effects? Are the desirable effects?	Are the anticipated desirable effects are? Are the anticipated desirable effects are? Are the anticipated desirable effects are? Are the anticipated undesirable effects and a probably the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012), however, neither of these reviews (lentified any studies that assessed the effects of unique auxiliary nurse midwives in the effects of this intervention. What is the certainty of the desirable effects of this intervention. What is the certainty of the desirable effects of the effects of the effects of this intervention. Indirect evidence: One of these reviews (Polus 2012a) identified one study from Thailand where the effects of sudispance performed by midwives are observed to the undesirable effects of this intervention. Indirect evidence: One of these reviews (Polus 2012a) identified one study from Thailand where the effects of study shows that there is little or no difference between midwives and doctors with regard to complications during surgery or postoperative morbidity. Annex: page 62 (Polus 2012a – Table 3) Are the desirable effects? Are the desirable effects? Are the desirable effects of this intervention. A systematic review (Polus 2012a) is accordance to effects of the effects of midlevel providers, including auxiliary nurse effects of the effects of this intervention. Indirect evidence: One of these reviews (Polus 2012a) identified one study from Thailand where the effects of this intervention. Indirect evidence: One of these reviews (Polus 2012a) identified one study from Thailand where the effects of this surgery or postoperative morbidity. Are the desi



	Is the incremental cost small relative to the benefits?		EVIDENCE	COMMENTS AND QUERIES
			Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	 We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctornurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects, service fees; and a lack of support from husbands. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow auxiliary nurse midwives to perform tubal ligation. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



12.6. RECOMMENDATION:

Should AUXILIARY NURSE MIDWIVES perform vasectomy?

Problem: Poor access to contraception **Option**: Auxiliary nurse midwives performing vasectomy **Comparison**: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
		\square		
	 auxiliary nurse midwives are already an established c a well-functioning referral system is in place or can be 			
	practice of auxiliary nurse midwives.			
Justification	There is insufficient evidence on the effectiveness of this in	ntervention. In addition, there is uncertainty regarding its acce	ptability, feasibility and cost-effectiveness.	
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities	Studies to assess the effects, acceptability and feasibility o	f auxiliary nurse midwives performing vasectomy are needed		



12.6. EVIDENCE BASE:

Should AUXILIARY NURSE MIDWIVES perform vasectomy?

Problem: Poor access to contraception

Option: Auxiliary nurse midwives performing vasectomy Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes			
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including auxiliary nurse midwives, in improving the delivery of health care services (Lassi 2012). However, neither of these reviews identified any studies that assessed the effects of using auxiliary nurse midwives to perform vasectomy. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes			
			Main resource requirements		
			Resource	Settings in which auxiliary nurse midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training	Practice-based training in vasectomy technique. Auxiliary nurse midwives are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial	
soul	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor	
RE			Supplies	Surgical instruments, antiseptic solution (vasectomy), suture material, surgical facility / theatre, resuscitation equipment	
			Referral	To a referral centre for failed vasectomies and / or complications	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □	We are not aware of any systematic reviews that considered the acceptability of auxiliary nurse midwife interventions. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: A systematic review (Rashidian 2012) exploring factors that influence the success of doctor-nurse substitution suggests that the acceptability of this intervention to key stakeholders may be mixed: Nurses may be motivated to take on new tasks by increased recognition and job satisfaction (moderate certainty evidence) Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). They may welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regarding family planning; a fear of side effects and service fees. Annex: page 43 (Rashidian 2012); page 63 (Polus 2012b)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow auxiliary nurse midwives to perform vasectomy. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a review of country case studies of task shifting for family planning (Polus 2012b) suggests that auxiliary nurses lacked confidence in their skills, partly because they had insufficient opportunities to practice these skills in settings were demand was low. In addition, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (moderate certainty evidence) (Glenton, Colvin 2012, Rashidian 2012, Colvin 2012). Annex: page 63 (Polus 2012b); page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



4.1. RECOMMENDATION:

Should NURSES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for pPROM Option: Nurses delivering injectable antibiotics for pPROM Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		\square	
	We suggest considering the option with targeted monitoring and eimplemented where nurses are trained to give injections and in call	valuation. As there are questions about whether nurses have the skill re for pregnant women.	s and equipment to make the diagnosis, the intervention should be
Justification		osing preterm pre-labour rupture of membranes (pPROM) and delive nd feasible approach to the management of preterm PROM. It may al	
Implementation considerations	on The following should be considered when using nurses to deliver antibiotics to treat preterm PROM:		ough regulations and job descriptions any changes in scope of practice. Giving incentives for certain
Monitoring and evaluation			
Research priorities	Studies assessing the effects and the acceptability of using	nurses to deliver injectable antibiotics to treat preterm PROM	in LMICs are needed



4.1 EVIDENCE BASE:

Should NURSES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for pPROM **Option**: Nurses delivering injectable antibiotics for pPROM **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, this review did not identify any studies that specifically assessed the effects of nurses delivering injectable antibiotics for preterm PROM. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Indirect evidence: The same review identified a number of studies, mostly from high income settings, where nurses were compared to doctors for the delivery of other types of interventions. The review suggests that nurse care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies.	
	What is the		Outcomes Impacts Certainty of the anticipated effect	
HARMS (certainty of the	Very Low Moderate High No Varies low direct evidence	Patient health status For some of the outcomes, benefits in favour of nurses. For other outcomes, no differences between nurses and doctors Very low to moderate	
ر ا ا	anticipated effects?		Patient mortality No differences between nurses and primary care doctors Moderate	
BENEFIT	Are the		Process of care Mixed results: some studies showed differences between nurses and primary care doctors in process of care, e.g. nurses gave more advice to patients, while others showed no differences	
	desirable effects large relative to the undesirable	No Probably Uncertain Probably Yes Varies no yes	Patient Patients were significantly more satisfied with nurses compared with primary care doctors. Also, patients preferred significantly more often to see a nurse rather than a primary care doctor.	
	effects?		Annex: page 6 (Laurant 2012)	
			Main resource requirements	
			Resource Settings in which nurses already provide other care	
RESOURCE USE	Are the resources required	re the No Probably Uncertain Probably Yes Varies no yes	Training E.g. one week of training in diagnosis and management, including diagnosis of amniotic fluid volume by ultrasound where available. Assumes proficiency in diagnosing pregnancy, assessing gestational age, and assessing amniotic fluid leakage through observation and simple pH testing	
RESO	small?		Supervision and Regular supervision by senior midwife or doctor monitoring	
			Supplies Antibiotics, diagnostic equipment, e.g. litmus paper. Ultrasound equipment	
			Referral Transportation, adequate referral centre	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
			A systematic review of nurse-doctor substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of injectable antibiotics for preterm PROM when delivered by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctors may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence) Annex: page 43 (Rashidian 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (antibiotics and simple diagnostic tools). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty).In addition, in some settings, changes to norms or regulations may be needed to allow nurses to prescribe and deliver injectable antibiotics. Annex: page 43 (Rashidian 2012)	



10.1. RECOMMENDATION:

Should NURSES perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV Option: Nurses performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
	\square		
	We recommend against the use of nurses to perform external cepha	alic version.	
Justification	There is insufficient evidence on the effectiveness of nurses perform	ning external cephalic version, the intervention is outside of their typic	cal scope of practice, and its acceptability is uncertain.
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities			



10.1 EVIDENCE BASE:

Should NURSES perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV Option: Nurses performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes	care that was given by primary that specifically assessed the e	The same review identified a number of studies, mostly from high income settings, where nurses were compared to doctors for the delivery of other types of interventions. The review suggests that nurse care may mprove several health outcomes while it may make no difference to other outcomes. However, the certainty		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	compared to doctors for the del			
S OF TH	What is the certainty of	Very Low Moderate High No direct Varies	Outcomes	Impacts	Certainty of the anticipated effect	
& HARM	the anticipated effects?	low evidence	: :	outcomes, benefits in favour of nurses. For other no differences between nurses and doctors	Very low to moderate	
FITS				ces between nurses and primary care doctors	Moderate	
BENE	Are the desirable	No Dorbaldo Ularadoia Dorbaldo Van Varian	and primar	Its: some studies showed differences between nurses y care doctors in process of care, e.g. nurses gave e to patients, while others showed no differences	Very low to moderate	
	effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies yes	satisfaction and with primar	ere significantly more satisfied with nurses compared ry care doctors. Also, patients preferred significantly to see a nurse rather than a primary care doctor.	Very low to moderate	
	enects?		Annex: page 6 (Laurant 2012)			
			Main resource requirements			
			Resource	Settings in which nurses already provide other care	Э	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training	E.g. 1-2 weeks of practice-based training to assess foe perform ECV	tal position and	
OUR	required	no yes 🔲 🖂 🖂	Supervision and monitoring	Regular supervision by senior midwife or doctor		
RES	small?		Supplies	Talcum powder. If ultrasound is available it may be help	oful.	
			Referral	Transportation to a centre where comprehensive emerg (CeMOC) is available	gency obstetric care	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of nurse-doctor substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of ECV when performed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctor acceptance may also be influenced by level of nurse experience (low certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence) Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires very few supplies. In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary, for instance if a caesarean section is needed. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). Annex: page 43 (Rashidian 2012)	



11.5. RECOMMENDATION:

Should NURSES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Nurses administering corticosteroids to pregnant women in the

context of preterm labour

Comparison: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option in the context of rigorous research	We recommend the option		
	\square				
	We recommend against the use of nurses to administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes				
Justification	There is insufficient evidence on the effectiveness of nurses administering these drugs; they do not have the necessary clinical skills for diagnosis of preterm labour. We therefore recommend against the option.				
Implementation considerations	Not applicable				
Monitoring and evaluation	ng and evaluation				
Research priorities	-				



11.5. EVIDENCE BASE:

Should NURSES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Nurses administering corticosteroids to pregnant women in the

context of preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, this review did not identify any studies that specifically assessed the effects of nurses administering corticosteroids. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □	Indirect evidence: The review did identify a number of studies, mostly from high income settings, where nurses were compared to doctors for the delivery of other types of interventions. The review suggests that nurse care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies.		
OF T	What is the		Outcomes Impacts Certainty of the anticipated effect		
HARMS	certainty of the		Patient health For some outcomes, benefits in favour of nurses. For other outcomes, no differences between nurses and doctors Very low to moderate		
TS &	anticipated effects?		Patient mortality No differences between nurses and primary care doctors Moderate		
BENEFI	Are the desirable		Process of care Mixed results: some studies showed differences between nurses and primary care doctors in process of care, e.g. nurses gave more advice to patients, while others showed no differences Very low to moderate		
	effects large relative to the undesirable No Probably Uncertain Probably yes Uncertain Probably yes The probably of the pro	no yes	Patient Patients were significantly more satisfied with nurses compared with primary care doctors. Also, patients preferred significantly more often to see a nurse rather than a primary care doctor.		
	effects?		Annex: page 6 (Laurant 2012)		
			Main resource requirements		
			Resource Settings in which nurses already provide other care		
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training E.g. 1-2 months of practice-based training in diagnosing and managing pre-term labour		
SOUR	required small?	no yes 🔲 🔲 🖂	Supervision and monitoring Regular supervision by midwife or doctor		
RES	Silialit		Supplies Corticosteroids		
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available		
	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES	

World	Health
Organ	izatior

	Is the incremental cost small relative to the benefits?	no yes	Yes Varies	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	no yes	es Varies	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of corticosteroids when delivered by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	no yes	'es Varies □ □	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. The intervention requires clinical skills in the diagnosis of preterm labour, which nurses do not normally possess. In addition, while training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow auxiliary nurse midwives to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.7. RECOMMENDATION:

Should NURSES perform vacuum extraction during childbirth?

Problem: Poor access to vacuum extraction Option: Nurses performing vacuum extraction

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
	We recommend against the use of nurses to perform vacuum extrac	ction.		
Justification	There is insufficient evidence on the effectiveness of nurses performing vacuum extraction during childbirth, the intervention is outside of their typical scope of practice and its acceptability and feasibility are uncertain. We therefore recommend against the option.			
Implementation considerations	- Not applicable			
Monitoring and evaluation	Failure rates, injuries to mother and baby.			
Research priorities	-			



11.7 EVIDENCE BASE:

Should NURSES perform vacuum extraction during childbirth?

Problem: Poor access to vacuum extraction Option: Nurses performing vacuum extraction

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	care that was given by prim that specifically assessed the	rched for studies that assessed the effects of nurse-led prima ary care doctors (Laurant 2012). However, this review did no ne effects of nurses performing vacuum extraction. We are the but the desirable or undesirable effects of this intervention.	ot identify any studies herefore unable to	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	to doctors for the delivery o	mber of studies, mostly from high income settings, where nu f other types of interventions. The review suggests that nurs nile it may make no difference to other outcomes. However, t		
IS OF TH	What is the certainty of	Very Low Moderate High No direct Varies	Outcomes	Impacts	Certainty of the anticipated effect	
& HARN	the anticipated effects?	low evidence	= I	me outcomes, benefits in favour of nurses. For other es, no differences between nurses and doctors	Very low to moderate	
BENEFITS	Are the desirable		Process of care Mixed r	rences between nurses and primary care doctors esults: some studies showed differences between nurses mary care doctors in process of care, e.g. nurses gave dvice to patients, while others showed no differences	Moderate Very low to moderate	
	effects large relative to the undesirable effects?	satisfaction and with pri	s were significantly more satisfied with nurses compared mary care doctors. Also, patients preferred significantly ten to see a nurse rather than a primary care doctor.	Very low to moderate		
			Annex: page 6 (Laurant 2012)			
			Main resource requiremen	nts		
JSE	Are the		Resource	Settings in which nurses already provide other car	е	
SCE (resources	No Probably Uncertain Probably Yes Varies no yes	Training	E.g. 1-2 weeks of practice-based training to use a vacu	uum extraction device	
RESOURCE USE	required small?		Supervision and monitoring	g Regular supervision by senior midwife or doctor		
RE	-		Supplies	Vacuum extraction device, equipment for neonatal res	uscitation	
			Referral	Transportation to a referral centre		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of vacuum extraction when performed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling t o relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence) Annex: page 43 (Rashidian 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	The intervention requires a vacuum extraction device and equipment for neonatal resuscitation. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary. However, (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). In some settings, changes to norms or regulations may be needed to allow nurses to perform vacuum extraction. Annex: page 43 (Rashidian 2012)	



11.8 and 11.10. RECOMMENDATION:

Should NURSES deliver the loading dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility, and (b) to treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Nurses delivering loading dose of magnesium sulphate for prevention and

treatment of eclampsia

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
		☑				
	We suggest considering the use of nurses to deliver the <u>loading dose</u> of magnesium sulphate to prevent and to treat eclampsia before referring to a higher facility with targeted monitoring and evaluation.					
There is insufficient evidence on the effectiveness of nurses delivering a loading dose of magnesium sulphate to prevent and treat eclampsia and refer to a higher facility. However, a World Organization guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium sulphate loading dose, followed by important transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak recommendation) (WHO, 2011).						
Implementation considerations	The following should be considered when using nurses to deliver magnesium sulphate:					
Monitoring and evaluation	on					
Research priorities						



11.8 and 11.10. EVIDENCE BASE:

Should NURSES deliver a <u>loading</u> dose of magnesium sulphate to (a) <u>prevent</u> eclampsia and refer to a higher facility, and (b) to <u>treat</u> eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Nurses delivering loading dose of magnesium sulphate for

prevention and treatment of eclampsia

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

•	CRITERIA JUDGEMENT		EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, this review did not identify any studies that specifically assessed the effects of nurses delivering magensium sulphate. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	Note: A World Health Organisation guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use
RMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies yes	Indirect evidence: The review did identify a number of studies, mostly from high income settings where nurses were compared to doctors for the delivery of other types of interventions. issues. The review suggests that nurse care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies.	of magnesium sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low
	What is the certainty of	Very Low Moderate High No direct Varies	Outcomes Impacts Certainty of the anticipated effect	quality evidence, weak recommendation) (WHO, 2011). The guideline makes no reccommendation
⋖ర	the anticipated effects?	low evidence	Patient health status For some outcomes, benefits in favour of nurses. For other outcomes, no differences between nurses and doctors Very low to moderate	regarding (a) which cadre should deliver the loading or maintenance doses for preventing and treating
BENEFITS 8			Patient mortality No differences between nurses and primary care doctors Moderate	eclampsia, and (b) what should be
	Are the desirable	No Probably Uncertain Probably Yes Varies	Process of care Mixed results: some studies showed differences between nurses and primary care doctors in process of care, e.g. nurses gave more advice to patients, while others showed no differences	done when immediate transfer to a higher-level facility is not possible following the loading dose.
	effects large relative to the undesirable	no yes	Patient Patients were significantly more satisfied with nurses compared with primary care doctors. Also, patients preferred significantly moderate more often to see a nurse rather than a primary care doctor.	
	effects?		Annex: page 6 (Laurant 2012)	
			Main resource requirements	
			Resource Settings in which nurses already provide other care	
S	Are the resources	No Probably Uncertain Probably Yes Varies	Training E.g. 2 weeks of practice-based training for nurses to diagnosis eclampsia and pre-eclampsia	
OUR	required		Supervision and monitoring Regular supervision by senior midwife or doctor	
RES	small?	— — ! -	Supplies Magnesium sulphate, calcium gluconate, IV equipment	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of the loading dose of magnesium sulphate for eclampsia when delivered by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctor acceptance may be influenced by level of nurse experience (low certainty evidence). Doctors may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (Magnesium sulphate, calcium gluconate, IV equipment). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). In some settings, changes to norms or regulations may be needed to allow nurses to prescribe and deliver the loading dose of magnesium sulphate. Annex: page 43 (Rashidian 2012)	



11.9 and 11.11. RECOMMENDATION:

Should NURSES deliver the maintenance dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility, and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Nurses delivering loading dose of magnesium sulphate to prevent and

treat eclampsia

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
	\square		
	We recommend against the use of nurses to deliver the maintenance	e dose of magnesium sulphate to prevent or treat eclampsia.	
Justification	There is insufficient evidence on the effectiveness of nurses delivering is outside of their typical scope of practice and its acceptability is under	ng a maintenance dose of magnesium sulphate to prevent or treat eclar certain.	mpsia and refer to a higher facility. In addition, the intervention
Implementation considerations	- Not applicable		
Monitoring and evaluatio	n		
Research priorities			



11.9 and 11.11. EVIDENCE BASE:

Should NURSES deliver the maintenance dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility, and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Nurses delivering loading dose of magnesium sulphate to

prevent and treat eclampsia

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, this review did not identify any studies that specifically assessed the effects of nurses delivering magensium sulphate. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	Note: A World Health Organisation guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use
OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	Indirect evidence: The same review identified a number of studies, mostly from high income settings, where nurses were compared to doctors for the delivery of other types of interventions. The review suggests that nurse care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies.	of magnesium sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low
OF	What is the certainty of	Very Low Moderate High No direct Varies	Outcomes Impacts Certainty of the anticipated effect	quality evidence, weak recommendation) (WHO, 2011). The guideline makes no reccommendation
	the anticipated effects?	low evidence	Patient health For some outcomes, benefits in favour of nurses. For other outcomes, no differences between nurses and doctors Wery low to moderate	regarding (a) which cadre should deliver the loading or maintenance
BENEFITS & I			Patient mortality No differences between nurses and primary care doctors Moderate	doses for preventing and treating eclampsia, and (b) what should be
	Are the desirable	No Probably Uncertain Probably Yes Varies	Process of care Mixed results: some studies showed differences between nurses and primary care doctors in process of care, e.g. nurses gave more advice to patients, while others showed no differences Very low to moderate	done when immediate transfer to a higher-level facility is not possible following the loading dose.
	effects large relative to the undesirable	no yes	Patient Patients were significantly more satisfied with nurses compared with primary care doctors. Also, patients preferred significantly moderate more often to see a nurse rather than a primary care doctor.	
	effects?		Annex: page 6 (Laurant 2012)	
			Main resource requirements	
			Resource Settings in which nurses already provide other care	
S & HARMS OF THE OPTIONS	Are the resources	No Probably Uncertain Probably Yes Varies	Training E.g. 2 weeks of practice-based training for nurses to diagnosis eclampsia and pre-eclampsia	
OUR	required		Supervision and monitoring Regular supervision by senior midwife or doctor	
RES	small?		Supplies Magnesium sulphate, calcium gluconate, IV equipment	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
				1



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of the loading dose of magnesium sulphate for eclampsia when delivered by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctor acceptance may be influenced by level of nurse experience (low certainty evidence). Doctors may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (Magnesium sulphate, calcium gluconate, IV equipment). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). In some settings, changes to norms or regulations may be needed to allow nurses to prescribe and deliver the loading dose of magnesium sulphate. Annex: page 43 (Rashidian 2012)	



11.12. RECOMMENDATIONS:

Should NURSES deliver magnesium sulphate to women in preterm labour as a neuroprotective for the foetus?

Problem: Poor access to treatment for preterm birth

Option: Nurses delivering magnesium sulphate for preterm labour **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
	\square		
	We recommend against the use of nurses to deliver magnesium sul	phate to women in preterm labour.	
Justification	While the intervention may be acceptable and feasible, there is insufficient evidence on the effectiveness of nurses delivering magnesium sulphate to women in preterm labour as a neuroprotective for the foetus and the intervention is outside of their typical scope of practice.		
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies of the effects and acceptability of nurses delivering m	nagnesium sulphate and / or corticosteroids for women at risk	of preterm birth



11.12. EVIDENCE BASE:

Should NURSES deliver magnesium sulphate to women in preterm labour as a neuroprotective for the foetus?

Problem: Poor access to treatment for preterm birth

Option: Nurses delivering magnesium sulphate for preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no Yes	care that was given by primary that specifically assessed the	One systematic review searched for studies that assessed the effects of nurse-led primary care compared to are that was given by primary care doctors (Laurant 2012). However, this review did not identify any studies nat specifically assessed the effects of nurses delivering magnesium sulphate. We are therefore unable to raw any conclusions about the desirable or undesirable effects of this intervention.		
E OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	doctors for the delivery of othe	er of studies, mostly from high income settings, where nu r types of interventions. issues. The review suggests that it may make no difference to other outcomes. However, t	nurse care may improve	
S OF TH	What is the certainty of	Very Low Moderate High No direct Varies	Outcomes	Impacts	Certainty of the anticipated effect	
BENEFITS & HARMS OF THE OPTIONS	the anticipated effects?	low evidence	= I	outcomes, benefits in favour of nurses. For other no differences between nurses and doctors	Very low to moderate	
			Patient mortality No differen	ces between nurses and primary care doctors	Moderate	
	Are the desirable	No Probably Uncertain Probably Yes Varies	and primar	ilts: some studies showed differences between nurses by care doctors in process of care, e.g. nurses gave to patients, while others showed no differences	Very low to moderate	
	effects large relative to the undesirable effects?	no yes Values	satisfaction and with prima	ere significantly more satisfied with nurses compared ry care doctors. Also, patients preferred significantly to see a nurse rather than a primary care doctor.	Very low to moderate	
	enects:		Annex: page 6 (Laurant 2012)			
			Main resource requirements			
			Resource	Settings in which nurses already provide other car	е	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training	E.g. 2 weeks of training to diagnosis pre-term labour, g and, for magnesium sulphate, be given skills to safely monitor treatment		
soui	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor		
RE			Supplies	Magnesium sulphate, IV equipment		
			Referral	Transportation to a centre where comprehensive emer care (CeMOC) is available	gency obstetric	
			1			<u> </u>



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of magnesium sulphate or corticiosteroids for preterm birth when delivered by nurses. We are therefore uncertain about the acceptability of these interventions to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence) Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctor acceptance may be influenced by level of nurse experience (low certainty evidence). Doctors may be comfortable with nurse prescribing, believing that it improves continuity of care (low certainty evidence). However, an increase in nurse autonomy may negatively affect or produce negative reactions among other professions, including doctors and midwives, who for instance may be unwilling relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (magnesium sulphate and to IV equipment). In addition, it is simple to deliver. The intervention requires some training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). In some settings, changes to norms or regulations may be needed to allow nurses to prescribe and deliver magnesium sulphate. Annex: page 43 (Rashidian 2012)	



12.3. RECOMMENDATION:

Should NURSES insert and remove intrauterine device (IUDs)?

Problem: Poor access to contraception Option: Nurses inserting and removing IUDs Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
			\square
	We recommend the use of nurses to deliver IUDs.		
Justification	While acceptability may vary, this intervention may be an ef underserved populations.	fective, cost-effective and feasible approach to contraception a	and may also reduce inequalities my extending care to
Implementation considerations	 The distribution of roles and responsibilities between nurses at Changes in regulations may be necessary to support any chater and the context of a comprehensive not for others may negatively affect the work that is carried out. Referral systems need to function well, i.e. financial, logistical quality of care at the first referral facility. Supplies of drugs and other commodities need to be secure. Responsibility for supervision needs to be clear and supervision. Because of the sensitivity of sexual and contraceptive issues. It may also be an advantage to ensure that relevant training of Nurses and their supervisors need to receive appropriate initit to reinforce that nurses should avoid introducing their own critical contents. 	anning and implementation of the intervention to ensure acceptability and other health workers needs to be made clear, including through reinges in nurses' scope of practice e remuneration scheme, in which salaries or incentives reflect any chut (e.g. transport) and relational barriers need to be addressed. Specific on needs to be regular and supportive planners should consider whether health workers promoting or deliver of female health workers is carried out by females all and ongoing training, including in communicating with recipients and	egulations and job descriptions anges in scope of practice. Giving incentives for certain tasks but cally, local health systems need to be strengthened to improve ering reproductive health services to women should also be women. d in side effects of different contraceptive methods. Training needs
Monitoring and evaluation			
Research priorities			



12.3. EVIDENCE BASE:

Should NURSES insert and remove intrauterine devices (IUDs)?

Problem: Poor access to contraception Option: Nurses inserting and removing IUDs

Comparison: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. The review also identified two studies from Brazil and Columbia where IUD insertion by <u>nurses</u> was compared with IUD insertion by <u>doctors</u> . These studies show that the use of nurses may lead to little or no difference in expulsion rates and continuation rates (low certainty evidence), and probably leads to less pain (moderate certainty evidence). We are uncertain about the differences between nurses and	
	Are the anticipated undesirable	No Probably Uncertain Probably Yes Varies no yes	doctors for removal rates, rates of unintended pregnancies, and complication rates (very low certainty evidence). Other outcomes show mixed results (low certainty evidence).	
	effects small?		Outcomes Impacts Certainty of the anticipated effect	
PTIONS	What is the certainty of the	Very Low Moderate High No direct Varies	Expulsion rates There may be little or no difference between nurses and doctors Low	
F THE (anticipated effects?		Removal rates We are uncertain if there are any differences between nurses and doctors Very low	
ARMS 0			Unintended We are uncertain if there are any differences between pregnancies ⊕○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○	
BENEFITS & HARMS OF THE OPTIONS			Continuation rates There may be little or no difference between nurses and doctors Low	
BEN	Are the desirable effects large	No Probably Uncertain Probably Yes Varies	Pain at insertion The use of nurses probably leads to less pain at insertion of IUDs Moderate The use of nurses probably leads to less pain at insertion of IUDs	
	relative to the undesirable effects?	no yes	Insertion failure The use of nurses to insert IUDs showed mixed results Low	
	enects:		Complication rates We are uncertain if there are any differences between nurses and doctors Very low	
			Annex: page 58 (Polus 2012a – Table 1)	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
			Main resource requirements	
SE			Resource Settings in which nurses already provide other care	
CE US	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training Minimal training for nurses to insert and remove an IUD	
RESOURCE	required		Supervision and monitoring Regular supervision by senior midwife or doctor	
RES	small?	,	Supplies IUD, antiseptic solution, insertion equipment	
			Referral This may be needed for a small number of women	
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	



ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of IUDs when inserted and removed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). For tasks that are considered sensitive (such as pelvic exams) patients may prefer (female) nurses, although views may vary (low certainty evidence). They may also prefer nurses for services that require more attention and time (low certainty evidence). However, in some settings, recipients may experience nurses as too overworked to explain things to recipients (low certainty evidence) In addition, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctors may also be comfortable with nurse prescribing, believing that it improves the continuity of care that patients receive (low certainty evidence). However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific ty	
EASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (IUDs, insertion equipment, antiseptic solution). In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is necessary. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). Annex: page 43 (Rashidian 2012)	



12.4. RECOMMENDATION:

Should NURSES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Nurses inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
			₫
	We recommend the use of nurses to insert and remove contraceptive implants.		
Justification	There is insufficient evidence on the effectiveness of this intervention, and acceptability may vary. However, there is evidence to suggest that nurses can effectively deliver other similar interventions. In addition, this intervention may be a cost-effective and feasible approach to contraception and may also reduce inequalities my extending care to underserved populations.		
Implementation	The following should be considered when using nurses to insert and remove contraceptive implants:		
considerations	 The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between nurses and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in nurses' scope of practice Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies of drugs and other commodities need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Because of the sensitivity of sexual and contraceptive issues, planners should consider whether health workers promoting or delivering reproductive health services to women should also be women. It may also be an advantage to ensure that relevant training of female health workers is carried out by females Nurses and their supervisors need to receive appropriate initial and ongoing training, including in communicating with recipients and in side effects of different contraceptive methods. Training needs to reinforce that auxiliary nurses should avoid introducing their own criteria for determining who should receive contraception are confidential. Nurses need to be trained in confidentiality issues and recipients need to be made aware that their interactions with health workers regarding contraception are confidential.		
Monitoring and evaluation			
Research priorities			



12.4. EVIDENCE BASE:

Should NURSES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Nurses inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA		JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
INS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ ☑ □	planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, none of these reviews identified any studies that specifically assessed the effects of nurses inserting and removing contraceptive	
S OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	implants. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: One of these systematic reviews (Polus 2012a) did identify two studies from Brazil and Columbia where IUD insertion by nurses was compared with IUD insertion by doctors. These studies show that the use of nurses may lead to little are a difference in available to lead to	
BENEFITS & HARMS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ ☑ □	little or no difference in expulsion rates and continuation rates (low certainty evidence), and probably leads to less pain (moderate certainty evidence). We are uncertain about the differences between nurses and doctors for removal rates, rates of unintended pregnancies, and complication rates (very low certainty evidence). Other outcomes show mixed results (low certainty evidence). The other systematic review (Laurant 2012) suggests that nurse-led care for a range of other health issues may improve several health outcomes while it may make no difference to other outcomes. However, the quality of this evidence varies.	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	·	
			Main resource requirements	
Ш			Resource Settings in which nurses already provide other care	
RCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training Some training for auxiliary nurse midwives to insert and remove a contraceptive implant	
RESOURCE	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
2			Supplies Contraceptive implant, insertion equipment and local anaesthetic	
			Referral Patients may need to go to a referral centre for removal difficulties	



	Is the incremental cost small relative to the benefits?	No Probably Uncertain Proba no yes	s	Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
	CRITERIA	JUDGEMENT		EVIDENCE	COMMENTS AND QUERIES
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Proba no yes □ □ □ ☑	s	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of contraceptive implants when inserted and removed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence) Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). For tasks that are considered sensitive (such as pelvic exams) patients may prefer (female) nurses, although views may vary (low certainty evidence). They may also prefer nurses for services that require more attention and time (low certainty evidence). However, in some settings, recipients may experience nurses as too overworked to explain things to recipients (low certainty evidence) In addition, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). Doctors may also welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctors may also welcome the transfer of certain repetitive tasks to nurses (e.g. pap smears) and nurses seem to be happy with these tasks (low certainty evidence). Doctors may also be comfortable with nurse prescribing, believing that it improves the continuity of care that patients receive (low certainty evidence). However, a lack of clarity about nurse roles and responsibilities in relation to other health workers may be a challenge (low certainty evidence). A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied t	



World Health Organization WHO Recommendations for Optimizing Health Worker Roles to Improve Access to Key Maternal and Newborn Health Interventions through Task Shifting

SIBILITY	Is the option feasible to implement?	No 🗆	Probably no	Uncertain	Probably yes	Yes Varies	The intervention requires very few supplies (contraceptive implants, insertion equipment, local anaesthetic). In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is necessary, particularly regarding the removal of contraceptive implants. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). Adequate referral to a higher level of care for further management of implant removal may be necessary.	
							Annex: page 43 (Rashidian 2012)	



12.5. RECOMMENDATION:

Should NURSES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception Option: Nurses performing tubal ligation Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option						
		\square							
	We suggest considering the option only in the context of rigorous research. This intervention should be evaluated where a well-functioning referral system is in place or call in place.								
	The panel acknowledges the different methods of tubal liga	tion that may be relevant in this context.							
Justification	There is insufficient evidence on the effectiveness of this intervention. However, this intervention may be a cost-effective, acceptable and feasible approach to contraception and may also reduce inequalities by extending care to underserved populations.								
Implementation considerations	Not applicable								
Monitoring and evaluation									
Research priorities	search priorities Studies to assess the effects, acceptability and feasibility of nurses performing tubal ligation are needed								



12.5. EVIDENCE BASE:

Should NURSES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception Option: Nurses performing tubal ligation

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES						
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes □ □ □ □	planning delivery in low effects of nurse-led prir these reviews identifie	nning delivery in low and middle income countries. Another systematic review searched for studies that assessed the ects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, none of					A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of nurse-led primary care compared to care that was given by primary care doctors (Laurant 2012). However, none of these reviews identified any studies that specifically assessed the effects of nurses performing tubal ligation. We are			
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes □ □ □ □	Indirect evidence: One postpartumtubal ligation shows that there may be									
	,	,	difference was not clinically important (moderate certainty evidence).									
& HARMS	the anticipated	low evidence	Outcomes	Impacts	Certainty of the anticipated effect							
	effects?		Length of operation	Midwives probably spend more time than doctors, but the difference is not clinically important	Moderate							
BENEFITS	Are the		Complications during surgery	There may be little or no difference between midwives and doctors	⊕⊕○○ Low							
	desirable effects large relative to the	No Probably Uncertain Probably Yes Varies	Postoperative morbidity	There may be little or no difference between midwives and doctors	⊕⊕○○ Low							
	undesirable effects?		Annex: page 62 (Polus	s 2012a – Table 3)								



				Main resource requirements					
						Resource	Settings in which nurses already provide other care		
RCE USE		No Probably no	Uncertain	Probably yes	Yes Varies	Training	Practice-based training in tubal ligation techniques. Nurses are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial		
RESOURCE	required small?					Supervision and monitoring	Regular supervision by senior midwife or doctor		
RE					Supplies	Surgical instruments, local anaesthetic, suture material, surgical facility / theatre, resuscitation equipment			
						Referral	To a referral centre for failed ligations and / or complications		
	CRITERIA	JUDGEMENT				EVIDENCE			COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably no	Uncertain ☑	Probably yes	Yes Varies	2012) suggests that, compared Overall, studies showed I Consultation length was I For the frequency of consultation.	certain as there is insufficient evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions		



ACCEPTABILITY	Is the option acceptable to most stakeholders?	No 🗀	Probably no	Uncertain ☑	Probably yes	Yes Varies	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of tubal ligation when performed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctors may negatively affect other professions or produce negative reactions among these professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of darity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence). A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge abou	
FEASIBILITY	Is the option feasible to implement?	No	Probably no	Uncertain	Probably yes	Yes Varies	The interventions require relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow nurses to perform tubal ligation. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). Annex: page 43 (Rashidian 2012)	



12.6. RECOMMENDATION:

Should NURSES perform vasectomy?

Problem: Poor access to contraception Option: Nurses performing vasectomy
Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

to health professionals

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option					
	We suggest considering this option only in the context of rigin place	gorous research. This intervention should be evaluated when	e a well-functioning referral system is in place or can be put					
Justification	There is insufficient evidence on the effectiveness of this interventions. However, this intervention may be a cost-effective, acceptable and feasible approach to contraception and may also reduce inequalities by extending care to underserved populations.							
Implementation considerations	Not applicable							
Monitoring and evaluation Research priorities	Studies to assess the effects, feasibility and acceptablity of	nurses performing vasectomy are needed						



12.6. EVIDENCE BASE: Should NURSES perform vasectomy?

Problem: Poor access to contraception Option: Nurses performing vasectomy Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies No yes			
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies No yes	A systematic review (Polus 2012a) searc family planning delivery in low and middl assessed the effects of nurse-led primar 2012). However, none of these reviews performing vasectomy. We are therefore		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □ □	effects of this intervention. Indirect evidence: One of these reviews postpartumtubal ligation performed by m. This study shows that there may be little complications during surgery or postope		
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 62 (Polus 2012a – Table 3	3)	
			Main resource requirements		
			Resource Setting	s in which nurses already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	trained	e-based training in vasectomy techniques. Nurses are not normally in surgical techniques during their graduate studies. Training needs erefore be relatively substantial	
SOU	required small?		Supervision and monitoring Regula	r supervision by senior midwife or doctor	
RE				al instruments, antiseptic solution, sutures, surgical facility / theatre, tation equipment	
			Referral To a re	ferral centre for failed vasectomies and / or complications	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □ □ □	Uncertain as there is insufficient evidence on effectiveness. Indirect evidence from the review referred to above (Laurant 2012) suggests that, compared to doctor-led care: Overall, studies showed lower costs for nurse-led care Consultation length was longer for nurses For the frequency of consultations, results were mixed For most studies there were no differences in the use of healthcare services and prescriptions	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of doctor-nurse substitution (Rashidian 2012) did not identify any studies that evaluated the acceptability of vasectomy when performed by nurses. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other maternal and child health interventions, the same review suggests that: Nurses may be motivated to offer advanced care by increased recognition and job satisfaction (moderate certainty evidence). Recipients may regard nurses as more accessible and better at listening and caring than doctors (moderate certainty evidence). However, some recipients may have concerns about nurses' competence and willingness to provide high quality care compared to doctors (low certainty evidence). In addition, for tasks that are more "medical" in nature, recipients may prefer doctors over nurses (low certainty evidence). Doctors were generally satisfied with the contribution of nurses to maternal and child health care, although some concerns were raised (low certainty evidence). Doctors may welcome the contribution of nurses where it reduces doctors' workloads (moderate certainty evidence). Doctor acceptance may be influenced by level of nurse experience (low certainty evidence). However, an increase in nurse autonomy may negatively affect other professions or produce negative reactions among these professions, including doctors and midwives, who for instance may be unwilling to relinquish final responsibility for patient care. A lack of clarity about nurse roles and responsibilities in relation to other health workers may also be a challenge (low certainty evidence). A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's mairtal status and age. Other factors that may affect the uptake of the intervention are primaril	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □	The interventions require relatively well-equipped facilities, including access to surgical instruments, surgical facility / theatre and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow nurses to perform vasectomy. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a systematic review (Rashidian 2012) suggests that nurses may be unprepared or not adequately trained or supervised when they are given advanced and substitution roles (low certainty). Annex: page 43 (Rashidian 2012)	



4.1. RECOMMENDATION:

Should MIDWIVES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM

Option: Midwives delivering injectable antibiotics Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option					
		Ø						
	We suggest considering this option with targeted monitoring functioning referral system is in place or can be put in place	g and evaluation. We suggest using this intervention where m	nidwives are already an established cadre and where a well-					
Justification	There is insufficient evidence on the effectiveness and feasibility of midwives diagnosing preterm pre-labour rupture of membranes (pPROM) and delivering initial treatment of injectable antibiotics using a standard syringe before referral. However, this intervention may be acceptable and feasible and may reduce inequalities by extending care to underserved populations.							
Implementation considerations	- Not applicable							
Monitoring and evaluation	1							
Research priorities								



4.1. EVIDENCE BASE:

Should MIDWIVES diagnose preterm pre-labour rupture of membranes (pPROM) and deliver initial treatment of injectable antibiotics, using a standard syringe, before referral?

Problem: Poor access to injectable antibiotics for preterm PROM **Option**: Midwives delivering injectable antibiotics **Comparison**: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any			
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	studies that assessed the effects of midwives delivering injectable antibiotics for preterm PROM. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.			
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: The review (Lassi 2012) did identify a number of studies, all from high income settings. In these studies, midwives delivered antenatal, intrapartum and postpartum care, but it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008).			
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 4 (Lassi 2012)			
RESOURCE USE	Are the resources required small?	No Probably Uncertain Probably Yes Varies no yes	Main resource requirements Resource Settings in which midwives already provide other care Training As midwives should be able to diagnose pregnancy, assess gestational age and leakage of amniotic fluid through observation and simple pH testing, little training on this is required, e.g. less than one week of training for midwives to diagnosis and manage, including diagnosis of amniotic fluid volume by ultrasound where available. Supervision and monitoring Regular supervision by senior midwife or doctor Supplies Antibiotics, equipment needed for diagnosis, e.g. litmus paper. Ultrasound equipment in some settings			



			Referral Transportation, adequate referral centre	
	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes □ □ □ □	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of injectable antibiotics for preterm PROM when delivered by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if these increase the midwives' ability to provide more holistic and continuous care. Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • However, midwives may not readily accept a mode of care that is technology-focused and that views pregnancy as risky and uncertain (moderate certainty evidence) • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence) Annex: page 20 (Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (antibiotics and simple diagnostic tools). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In addition, in some settings, changes to norms or regulations may be needed to allow midwives to prescribe and deliver injectable antibiotics. Annex: page20x (Colvin 2012)	



10.1. RECOMMENDATION:

Should MIDWIVES external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV **Option**: Midwives performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

Recommendation	We recommend against the option	We suggest considering the option in the context of rigorous research	We recommend the option
		☑	
	We suggest considering the option in the context of rigorous functioning referral system is in place or can be put in place	s research. We suggest evaluating this intervention where m a.	dwives are already an established cadre and where a well-
Justification	There is insufficient evidence on the effectiveness of midwin acceptable, is probably feasible and may reduce inequalitie	ves performing external cephalic version and it has the poten s by extending care to underserved populations.	tial to cause harm. However, this intervention is probably
Implementation considerations	- Not applicable.		
Monitoring and evaluation			
Research priorities	-		



10.1. EVIDENCE BASE:

Should MIDWIVES perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV Option: Midwives performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of ECV for breech presentation at term (Hofmeyr GJ, 2010). However, none of the included studies involved midwives. A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects have therefore judged the desirable	have therefore judged the desirable effects as probably large relative to the undesirable effects.
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ ☑ □	Indirect evidence: One of these reviews (Lassi 2012) did identify a number of other studies, all from high income settings, in which midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □	Annex: page 4 (Lassi 2012)	
			Main resource requirements	
			Resource Settings in which midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training E.g. 1-2 weeks of practice training to assess foetal position and perform ECV	
SOUR	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
RE	Small	•	Supplies Talcum powder. If ultrasound is available it may be helpful.	
			Referral Transportation to a centre where Comprehensive Emergency Obstetric Care(CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Although there is no direct evidence on effectiveness, the benefits are likely to be large in relation to the incremental costs.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of ECV when performed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives appear to be more likely to accept task-shifting initiatives if these increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who work closely with midwives may have better attitudes towards them (low certainty evidence). • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may lead to poor working relationships and 'turf battles' (moderate certainty evidence) Annex: page 20 (Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies. In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary, for instance if a caesarean section is needed. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). Annex: page 20 (Colvin 2012)	



11.5. RECOMMENDATION:

Should MIDWIVES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Midwives administering corticosteroids to pregnant women in the

context of preterm labour

Comparison: Care delivered by other cadres or no care Setting: Community/primary health care settings in LMICs with poor access to

health professionals

Recommendation	We recommend against the option	We suggest considering the option in the context of rigorous research	We recommend the option	
	We suggest considering the use of midwives to administer corticosteroids to pregnant women in the context of preterm labour in the context of rigorous research.			
Justification	There is insufficient evidence on the effectiveness of midwives administering corticosteroids to pregnant women for the foetus in the context of preterm labour. This intervention is probably feasible but its acceptability is uncertain. It may reduce inequalities by extending care to underserved populations. We therefore suggest considering the option in the context of rigorous research.			
Implementation considerations				
Monitoring and evaluation	oring and evaluation			
Research priorities Studies assessing the effects and the acceptability of using midwives to administer) corticosteroids to pregnant women are needed		are needed		



11.5. EVIDENCE BASE:

Should MIDWIVES administer corticosteroids to pregnant women in the context of preterm labour to improve neonatal outcomes?

Problem: Poor access to treatment

Option: Midwives administering corticosteroids to pregnant women in the

context of preterm labour

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access

to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	studies that assessed the effects of midwives administering corticosteroids. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies low □ □ □ □ □ □ □	Indirect evidence: The review (Lassi 2012) did identify a number of other studies, all from high income settings, in which midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008)	
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 4 (Lassi 2012)	
			Main resource requirements	
111			Resource Settings in which auxiliary nurse midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training E.g. 1 week of practice-based training in diagnosing and managing preterm labour	
ESOU	required small?		Supervision and monitoring Regular supervision by midwife or doctor	
R			Supplies Corticosteroids	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of corticosteroids when administered by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if they increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • However, midwives may not readily accept a mode of care that is technology-focused and that views pregnancy as risky and uncertain (moderate certainty evidence). They may also be less likely to accept tasks that increase the involvement of others in clinical care. In addition, midwives may be concerned about the increased liability that may accompany new tasks (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty). • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence) Annex: page 20 (Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires some supplies (drugs and simple diagnostic tools). Also, adequate referral to a higher level of care for further management may also be necessary. While training, clinical experience and supervision are needed, systematic reviews of lay health worker, nurse and midwife programmes suggest that sufficient training and supervision is often lacking (Glenton, Colvin 2012; Rashidian 2012; Colvin 2012). In some settings, changes to norms or regulations may be needed to allow midwives to prescribe and administer drugs. Annex: page 26 (Glenton, Colvin 2012); page 20 (Colvin 2012); page 43 (Rashidian 2012)	



11.7. RECOMMENDATION:

Should MIDWIVES perform vacuum extraction during childbirth?

Problem: Poor access to assisted delivery Option: Midwives performing vacuum extraction Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		lacksquare		
	We suggest considering the option with targeted monitoring and midwives are already an established cadre and where a well-fund	evaluation of failure rates, complications and process measures sucl ctioning referral system is in place or can be put in place.	n as frequency of use. We suggest using this intervention where	
Justification There is insufficient evidence on the effectiveness of midwives performing vacuum extraction during childbirth and its acceptability is uncertain. However, it is probably feasible and may reinequalities by extending care to underserved populations.			uncertain. However, it is probably feasible and may reduce	
Implementation considerations				
Monitoring and evaluation	The aim of the targeted monitoring and evaluation would be to gacadre uses this skill	ain additional data on how the intervention is being implemented, risk	of harm to baby and mother, failure rates, and how frequently the	
Research priorities				



11.7. EVIDENCE BASE:

Should MIDWIVES perform vacuum extraction during childbirth?

Problem: Poor access to assisted delivery **Option**: Midwives performing vacuum extraction Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	studies that assessed the effects of midwives performing vacuum extraction. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence:	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	The review (Lassi 2012) did identify a number of other studies, all from high income settings, in which midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008)	
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □	Annex: page 4 (Lassi 2012)	
			Main resource requirements	
JSE	Are the		Resource Settings in which midwives already provide other care	
RESOURCE USE	resources	No Probably Uncertain Probably Yes Varies no yes	Training E.g. 1-2 weeks of practice training to use a vacuum extraction device	
SOU	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
RE			Supplies Vacuum extraction device, equipment for neonatal resuscitation	
			Referral Transportation to a referral centre	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	Uncertain as there is no direct evidence on effectiveness.	
CCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of vacuum extraction when performed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if they increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • However, midwives may not readily accept a mode of care that is technology-focused and that views pregnancy as risky and uncertain (moderate certainty evidence). They may also be less likely to accept tasks that increase the involvement of others in clinical care. In addition, midwives may be concerned about the increased liability that may accompany new tasks (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty). • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence) Annex: page 20 (Colvin 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires a vacuum extraction device and equipment for neonatal resuscitation. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In some settings, changes to norms or regulations may be needed to allow midwives to perform vacuum extraction. Annex: page20 (Colvin 2012)	



11.8 and 11.10. RECOMMENDATION:

Should MIDWIVES deliver a loading dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility, and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to prevention of and treatment for eclampsia **Option**: Midwives delivering loading dose of magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		☑	
	We suggest considering the use of midwives to deliver a loading d	lose of magnesium sulphate to prevent or treat eclampsia and refer	to a higher facility with targeted monitoring and evaluation.
Justification	Organization guideline recommends that for settings where it is no	ivering a loading dose of magnesium sulphate to prevent or treat ed of possible to administer the full magnesium sulphate regimen, the u en with severe pre-eclampsia and eclampsia (very low quality evide	ise of magnesium sulphate loading dose, followed by immediate
Implementation considerations	The following should be considered when using midwives to deliver magnesium sulphate:		
Monitoring and evaluation			
Research priorities	Studies of the effects and acceptability of midwives delivering	ng magnesium sulphate for the prevention and treatment of e	eclampsia



11.8 and 11.10. EVIDENCE BASE:

Should MIDWIVES deliver a <u>loading dose</u> of magnesium sulphate to (a) <u>prevent</u> eclampsia and refer to a higher facility, and (b) <u>treat</u> eclampsia and refer to a higher facility?

Problem: Poor access to prevention of and treatment for eclampsia **Option:** Midwives delivering loading dose of magnesium sulphate **Comparison:** Care delivered by other cadres or no care **Setting:** Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
NS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of midwives administering magnesium sulphate. We are therefore unable			
THE OPTIONS	anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies yes	to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: immediate transfer to a higher-level he facility, is recommended for women with severe pre-eclampsia and eclampsia (village) low quality evidence, weak	draw any conclusions about the desirable or undesirable effects of this intervention.		
BENEFITS & HARMS OF THE	What is the certainty of the anticipated	Very Low Moderate High No direct evidence	ervices this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar		midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar loading or maintenance displayed to the control of this evidence varies.	recommendation) (WHO, 2011). The guideline makes no reccommendation regarding (a) which cadre should deliver the loading or maintenance doses for preventing and treating eclampsia, and (b)
EFITS 8	effects?			ndings were seen in another systematic review on the effects of midwife care (Hatem 2008) Annex: page 4 (Lassi 2012)		
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies yes	Annex: page 4 (Lassi 2012)		transfer to a higher-level facility is not possible following the loading dose.	
			Main resource requirements			
			Resource	Settings in which midwives already provide other care		
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training	E.g. less than 1 week of training for midwives to diagnosis and manage eclampsia and pre-eclampsia		
SOUR	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor		
RE	Jiliali :	•	Supplies	Magnesium sulphate, calcium gluconate, IV equipment		
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of using midwives to deliver the loading dose or maintenance dose of magnesium sulphate for eclampsia. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if they increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence). • However, midwives may not readily accept a mode of care that views pregnancy as risky and uncertain (moderate certainty evidence). They may also be less likely to accept tasks that increase the involvement of others in the clinical care (moderate certainty evidence). In addition, midwives may be concerned about the increased liability that may accompany new tasks and may be wary of new tasks that increase their workload (moderate certainty) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty evidence). • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In some settings, changes to norms or regulations may be needed to allow midwives to prescribe and deliver magnesium sulphate. Annex: page 20 (Colvin 2012)	



11.9 and 11.11. RECOMMENDATION:

Should MIDWIVES deliver a maintenance dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility, and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to initial and ongoing treatment for eclampsia Option: Midwives delivering loading dose and maintenance dose of magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		✓		
		evaluation. We suggest using this intervention in settings where midure of a woman with pre-eclampsia and eclampsia requires a team e		
Justification	There is no direct evidence on the effectiveness of this intervention. However, this intervention may be a cost-effective and feasible approach and may be acceptable under certain conditions. The intervention may also reduce inequalities by extending care to underserved populations.			
Implementation considerations	The following should be considered when using midwives to deliver magnesium sulphate: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers The distribution of roles and responsibilities between midwives and other health workers needs to be made clear, including through regulations and job descriptions Changes in regulations may be necessary to support any changes in midwives' scope of practice Programmes need to ensure that this task promotes continuity of care, for instance by ensuring that all midwives are "upskilled" to deliver this task for all potential recipients Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed. Specifically, local health systems need to be strengthened to improve quality of care at the first referral facility Supplies and equipment need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Midwives and their supervisors need to receive appropriate initial and ongoing training			
Monitoring and evaluation				
Research priorities	Studies of the effects and acceptability of midwives delivering	ng magnesium sulphate for the prevention and treatment of e	eclampsia	



11.9 and 11.11. EVIDENCE BASE:

Should MIDWIVES deliver a <u>maintenance dose</u> of magnesium sulphate to (a) <u>prevent</u> eclampsia and refer to a higher facility, and (b) <u>treat</u> eclampsia and refer to a higher facility?

Problem: Poor access to initial and ongoing treatment for eclampsia **Option**: Midwives delivering loading dose and maintenance dose of magnesium sulphate

Comparison: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes □ □ □ □ □ □	A systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of midwives administering magnesium sulphate. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention. Indirect evidence: The review (Lassi 2012) did identify a number of other studies, all from high income settings, in which midwives delivered antenatal, intrapartum and postpartum care, although it is not clear precisely what services this care included. The review suggests that midwife-led care may improve several health outcomes while it may make no difference to other outcomes. However, the certainty of this evidence varies. Similar findings were seen in another systematic review on the effects of midwife care (Hatem 2008) Note: A Systematic review searched for studies that assessed the effects of midwives, including midwives, including midwives, including midwives, including midwives, in cluding midwives, all from settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium sulphate regimen, t	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence		guideline makes no reccommendation regarding (a) which cadre should deliver the loading or maintenance doses for preventing and treating eclampsia, and (b) what should be done when immediate
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 4 (Lassi 2012)	transfer to a higher-level facility is not possible following the loading dose.
			Main resource requirements	
			Resource Settings in which midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training E.g. less than 1 week of training for midwives to diagnosis and manage eclampsia and pre-eclampsia	
SOUR	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
RE	Jiliuli i		Supplies Magnesium sulphate, calcium gluconate, IV equipment	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
				i e



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of using midwives to deliver the loading dose or maintenance dose of magnesium sulphate for eclampsia. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if they increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence). • However, midwives may not readily accept a mode of care that views pregnancy as risky and uncertain (moderate certainty evidence). They may also be less likely to accept tasks that increase the involvement of others in the clinical care (moderate certainty evidence). In addition, midwives may be concerned about the increased liability that may accompany new tasks and may be wary of new tasks that increase their workload (moderate certainty) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty evidence). • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a small amount of training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In some settings, changes to norms or regulations may be needed to allow midwives to prescribe and deliver magnesium sulphate. Annex: page 20 (Colvin 2012)	



11.12. RECOMMENDATIONS:

Should MIDWIVES deliver magnesium sulphate to women in preterm labour as a neuroprotection for the foetus?

Problem: Poor access to medical management of preterm birth **Option**: Midwives delivering magnesium sulphate for preterm labour **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option
		\square	
	We suggest considering the option in the context of rigorous reserves system is in place or can be put in place.	arch. We suggest evaluating this intervention where midwives are al	lready an established cadre and where a well-functioning referral
Justification		livering magnesium sulphate to women in preterm labour as a neuro ation of this drug and the intervention may be acceptable and feasible	
Implementation considerations	Not applicable		
Monitoring and evaluation			
Research priorities	Studies are needed of the effects and the acceptability of midwive	es delivering magnesium sulphate and / or corticosteroids for womer	n at risk of preterm birth.



11.12. EVIDENCE BASE:

Should MIDWIVES deliver magnesium sulphate to women in preterm labour as a neuroprotective for the fetus?

Problem: Poor access to medical management of preterm birth **Option**: Midwives delivering magnesium sulphate for preterm labour **Comparison**: Care delivered by other cadres or no care **Setting**: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A quatametic review ecorobed f	or studies that assessed the effects of midlevel providers, including midwives,	
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	in improving the delivery of hea studies that assessed the effec	Ith care services (Lassi 2012). However, the review did not identify any ts of midwives delivering magnesium sulphate for women in preterm labour. Taw any conclusions about the desirable or undesirable effects of this	
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ ☑ □	midwives delivered antenatal, in services this care included. The while it may make no difference	entify a number of other studies, all from high income settings, in which intrapartum and postpartum care, although it is not clear precisely what a review suggests that midwife-led care may improve several health outcomes to other outcomes. However, the certainty of this evidence varies. Similar systematic review on the effects of midwife care (Hatem 2008)	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 4 (Lassi 2012)		
			Main resource requirements		
			Resource	Settings in which midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training	E.g. less than 1 week of training for midwives to diagnosis pre-term labour, gestational age and, for magnesium sulphate, be given skills to safely administer and monitor treatment	
SOU	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor	
RE			Supplies	Magnesium sulphate, IV equipment	
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
					The state of the s



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review oftask-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of magnesium sulphate or corticiosteroids for preterm birth when delivered by midwives. We are therefore uncertain about the acceptability of these interventions to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Mothers and midwives are more likely to accept task-shifting initiatives if they increase the midwives' ability to provide more holistic and continuous care (moderate certainty evidence) • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • However, midwives may not readily accept tasks where pregnancy is viewed as risky and uncertain (moderate certainty evidence). In addition, midwives may be concerned about the increased liability that may accompany new tasks, and may be wary of new tasks that increase their workload (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty evidence) • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence).	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires relatively few supplies (magnesium sulphate and to IV equipment). In addition, it is simple to deliver. The intervention requires some training. Regular supervision needs to be in place, and adequate referral to a higher level of care for further management may also be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). In some settings, changes to norms or regulations may be needed to allow midwives to prescribe and deliver magnesium sulphate. Annex: page 20 (Colvin 2012)	



12.3. RECOMMENDATION:

Should MIDWIVES insert and remove intrauterine devices (IUDs)?

Problem: Poor access to contraception Option: Midwives inserting and removing IUDs
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
			☑
	We recommend the use of midwives to deliver IUDs with talexists	orgeted monitoring and evaluation. We suggest using this inte	ervention where a well-functioning midwife programme already
Justification		tervention, and acceptability may vary. However, there is eview the result of the servention is probably be a cost-effective and feasible approach	
Implementation considerations	ntation The following should be considered when using midwives to insert and remove IUDs:		to deliver this task for all potential recipients changes in scope of practice. Giving incentives for certain tasks but cifically, local health systems need to be strengthened to improve its and in side effects of different contraceptive methods. Training
Monitoring and evaluatio	n		
Research priorities	Studies of the acceptability to midwifes of inserting IUDs		



12.3. EVIDENCE BASE:

Should MIDWIVES insert and remove intrauterine devices (IUDs)?

Problem: Poor access to contraception Option: Midwives inserting and removing IUDs Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, none of these reviews identified any studies that assessed the effects of using midwives to insert and remove IUDs. We are therefore unable to draw any conclusions about	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	the desirable or undesirable effects of this intervention. Indirect evidence: One of these reviews (Polus 2012a) identified two studies from the Philippines and where IUD insertion by <u>auxiliary nurse midwives</u> was compared with IUD insertion by <u>doctors</u> . These studies show that the use of auxiliary nurse midwives probably leads to little or no difference in expulsion rates, removal	
RMS OF	What is the certainty of	Very Low Moderate High No Varies low direct	rates, continuation rates and rates of unintended pregnancies (moderate certainty evidence). There may also be little or no difference in referral rates before and after IUD insertion. The studies did not assess pain at insertion, insertion failure, and complications at insertion.	
ITS & HA	the anticipated effects?	evidence	The same review (Polus 2012a) also identified two studies from Brazil and Columbia where IUD insertion by nurses was compared with IUD insertion by doctors. These studies show that the use of nurses may lead to	
BENEFI	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	little or no difference in expulsion rates and continuation rates (low certainty evidence), and probably leads to less pain (moderate certainty evidence). We are uncertain about the differences between nurses and doctors for removal rates, rates of unintended pregnancies, and complication rates (very low certainty evidence). Other outcomes show mixed results (low certainty evidence). Annex: pages 58 and 60 (Polus 2012a – Tables 1 and 2)	
			Main resource requirements	
3E			Resource Settings in which midwives already provide other care	
CE U(Are the resources	No Probably Uncertain Probably Yes Varies	Training Minimal training for midwives to insert and remove an IUD	
RESOURCE USE	required	no yes	Supervision and monitoring Regular supervision by senior midwife or doctor	
RES	small?	1	Supplies IUD, antiseptic solution, insertion equipment	
			Referral This may be needed for a small number of women	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	The costs of this intervention by midwives are likely to be small in relation to the benefits	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of IUDs when inserted and removed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques. Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) However, midwives may be unwilling to take on tasks that require them to move beyond obstetric care, such as tasks related to family planning and sexual health, possibly because this is not viewed as part of their role and may entail an increased workload (moderate certainty evidence) A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and other beliefs regardin	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (IUDs, insertion equipment, antiseptic solution). In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). Annex: page 20 (Colvin 2012)	



12.4. RECOMMENDATION:

Should MIDWIVES insert and remove contraceptive implants?

Problem: Poor access to contraception **Option**: Midwives inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
			☑
	We recommend the use of midwives to insert and remove	contraceptive implants. We suggest using this intervention wh	nere a well-functioning midwife programme already exists.
Justification		ntervention and acceptability is uncertain. However, this intervach to contraception and may also reduce inequalities by exte	vention would require minimal additional skills. In addition, this ending care to underserved populations.
Implementation	The following should be considered when using midwives to inser-	rt and remove IUDs or contraceptive implants:	
considerations	 The distribution of roles and responsibilities between midwiv Changes in regulations may be necessary to support any ch Programmes need to ensure that this task promotes continui Implementation needs to be in the context of a comprehensi not for others may negatively affect the work that is carried or Referral systems need to function well, i.e. financial, logistical quality of care at the first referral facility Supplies of equipment needs to be secure Responsibility for supervision needs to be clear and supervision needs to receive appropriate in needs to reinforce that midwives should avoid introducing the 	ity of care, for instance by ensuring that all midwives are "upskilled" ve remuneration scheme, in which salaries or incentives reflect any out al (e.g. transport) and relational barriers need to be addressed. Spec	agh regulations and job descriptions to deliver this task for all potential recipients changes in scope of practice. Giving incentives for certain tasks but diffically, local health systems need to be strengthened to improve ts and in side effects of different contraceptive methods. Training
Monitoring and evaluatio	n		
Research priorities	Studies of the acceptability to midwifes of inserting IUDs ar	nd contraceptive implants	



12.4. EVIDENCE BASE:

Should MIDWIVES insert and remove contraceptive implants?

Problem: Poor access to contraception

Option: Midwives inserting and removing contraceptive implants **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). However, none of these reviews identified any studies that assessed the effects of using midwives to insert and remove contraceptive implants. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □	Indirect evidence: The same review (Polus 2012a) also identified two studies from Brazil and Columbia where IUD insertion by nurses was compared with IUD insertion by doctors. These studies show that the use of nurses may lead to little or no difference in expulsion rates and continuation rates (low certainty evidence), and probably leads to less pain (moderate certainty evidence). We are uncertain about the differences between nurses and doctors for removal rates, rates of unintended pregnancies, and complication rates (very low certainty evidence). Other outcomes show mixed results (low certainty evidence).	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 58 (Polus 2012a – Table 1)	
			Main resource requirements	
USE			Resource Settings in which midwives already provide other care	
CE US	Are the resources	No Probably Uncertain Probably Yes Varies	Training Some training for midwives to insert and remove a contraceptive implant	
RESOURCE	required small?	no yes	Supervision and monitoring Regular supervision by senior midwife or doctor	
RES	Jiliali :	·	Supplies Contraceptive implant, insertion equipment and local anaesthetic	
			Referral Patients may need to go to a referral centre for removal difficulties	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	The costs of this intervention by midwives are likely to be small in relation to the benefits	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of contracptive implants when inserted and removed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques. Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence) • However, midwives may be unwilling to take on tasks that requires them to move beyond obstetric care, such as tasks related to family planning and sexual health, possibly because this is not viewed as part of their role and may entail an increased workload (moderate certainty evidence) • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence) A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that recipients appreciate the easy access that community-based provision of contraceptives provides and appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious an	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires very few supplies (contraceptive implants, insertion equipment, local anaesthetic). In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is necessary, particularly regarding the removal of contraceptive implants. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). Adequate referral to a higher level of care for further management may be necessary if removal leads to complications. Annex: page 20 (Colvin 2012)	



12.5. RECOMMENDATION:

Should MIDWIVES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception

Option: Midwives performing tubal ligation
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option			
		\square				
	We suggest considering this option only in the context of rigorous research. The intervention should be evaluated where: - A well-functioning midwife programme already exists - A well-functioning referral system is in place or can be put in place The panel acknowledges the different methods of tubal ligation that may be relevant in this context.					
Justification	This intervention may be effective, and may reduce inequalities by extending care to underserved populations. There is some uncertainty as to whether the intervention is an acceptable and feasible approach.					
Implementation considerations						
Monitoring and evaluation						
Research priorities Studies to assess the effects and acceptability of midwives performing tubal ligation are needed						



12.5. EVIDENCE BASE:

Should MIDWIVES perform tubal ligation (post-partum and interval)?

Problem: Poor access to contraception Option: Midwives performing tubal ligation

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes □ □ □ ☑ □ □	family planning delivery in lo the effects of postpartumtub by doctors. This study show	systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for mily planning delivery in low and middle income countries. The review identified one study from Thailand where e effects of postpartumtubal ligation performed by midwives was compared to the same intervention performed odctors. This study shows that there is little or no difference between midwives and doctors with regard to implications during surgery or postoperative morbidity (low certainty evidence). While the midwives spent more		
OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		on,this difference was not clinically important (moderate c		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of	Very Low Moderate High No Varies	Length of operation th	Midwives probably spend more time nan doctors, but the difference is not clinically important	anticipated effect Moderate	
	the anticipated effects?	evidence	Complications during surgery	There may be little or no difference between midwives and doctors	⊕⊕○○ Low	
ENEFIT			Postoperative morbidity	There may be little or no difference between midwives and doctors	⊕⊕○○ Low	
BEN	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 62 (Polus 201	Annex: page 62 (Polus 2012a – Table 3)		
			Main resource requiremen	nts		
			Resource	Settings in which midwives already provide other	r care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training	Practice-based training in tubal ligation techniques. No normally trained in surgical techniques during their graining needs may therefore be relatively substantiation.	raduate studies.	
sou	required small?		Supervision and monitoring	g Regular supervision by senior midwife or doctor		
RE			Supplies	Surgical instruments, local anaesthetic, suture mater theatre, resuscitation equipment	rial, surgical facility /	
			Referral	To a referral centre for failed ligations and / or compli	ications	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies yes	We are uncertain about whether the desirable effects are large relative to the undesirable effects. In addition, the resources required are relatively large.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of tubal ligation when performed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence). • However, midwives may be unwilling to take on tasks that requires them to move beyond obstetric care, such as tasks related to family planning and sexual health, possibly because this is not viewed as part of their role and may entail an increased workload (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty evidence) • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence). A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, appreciate the use of female health workers in the delivery of contraceptives. However, the review also suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific typ	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The interventions require relatively well-equipped facilities, including access to surgical instruments, surgical facility and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow midwives to perform tubal ligation. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). Annex: page 20 (Colvin 2012)	



12.6. RECOMMENDATION:

Should MIDWIVES perform vasectomy?

Problem: Poor access to contraception

Option: Midwives performing vasectomy
Comparison: Care delivered by other cadres or no care
Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
	We suggest considering this option only in the context of rig A well-functioning midwife programme already exists A well-functioning referral system is in place or can be	gorous research. Implementation in the context of research shout in place	nould be done where:	
Justification	There is insufficient evidence on the effectiveness of this intervention. However, this intervention may be a cost-effective, acceptable and feasible approach to contraception and may also reduce inequalities by extending care to underserved populations.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities	Studies to assess the effects and acceptability of midwives performing vasectomy are needed			



12.6. EVIDENCE BASE: **Should MIDWIVES perform vasectomy?**

Problem: Poor access to contraception Option: Midwives performing vasectomy Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		A systematic review (Polus 2012a) searched for studies that assessed the effects and safety of task shifting for family planning delivery in low and middle income countries. Another systematic review searched for studies that assessed the effects of midlevel providers, including midwives, in improving the delivery of health care services (Lassi 2012). Neither of these reviews identified any studies that assessed the effects of midwives performing vasectomies. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	for family planning delivery in studies that assessed the effe care services (Lassi 2012). No midwives performing vasector		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: One of the of postpartum tubal ligation pe	ese reviews(Polus 2012a) identified one study from Thailand where the effects efformed by midwives was compared to the same intervention performed by there is little or no difference between midwives and doctors with regard to	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 62 (Polus 2012a	a – Table 3)	
			Main resource requirements	5	
			Resource	Settings in which midwives already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training	Practice-based training in vasectomy techniques. Midwives are not normally trained in surgical techniques during their graduate studies. Training needs may therefore be relatively substantial	
Soul	required small?		Supervision and monitoring	Regular supervision by senior midwife or doctor	
RE			Supplies	Surgical instruments, antiseptic solution, local anaesthetic, suture material, surgical facility, resuscitation equipment	
			Referral	To a referral centre for failed ligations/vasectomies and / or complications	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □	Uncertain as there is insufficient evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A systematic review of task-shifting in midwifery programmes (Colvin 2012) did not identify any studies that evaluated the acceptability of vasectomy when performed by midwives. We are therefore uncertain about the acceptability of this intervention to key stakeholders. Indirect evidence: For other midwife-delivered interventions, the same review suggests the following: • Midwives and their supervisors and trainers generally felt midwives had no problem learning new medical information and practicing new clinical techniques (moderate certainty evidence). Midwives may also be motivated by being "upskilled" as it can potentially lead to increased status, promotion opportunities and increased job satisfaction (moderate certainty evidence). • However, midwives may be unwilling to take on tasks that requires them to move beyond obstetric care, such as tasks related to family planning and sexual health, possibly because this is not viewed as part of their role and may entail an increased workload (moderate certainty evidence) • Doctors may be skeptical about the extension of midwifery roles in obstetric care, although doctors who worked closely with midwives tended to have better attitudes towards them (low certainty evidence) • A lack of clarity in roles and responsibilities between midwives and other health worker cadres, as well as status and power differences may also lead to poor working relationships and 'turf battles' (moderate certainty evidence). A review of country case studies of task shifting for family planning (Polus 2012b), which mainly included LHW programmes, suggests that some health workers may introduce their own criteria when determining who should receive contraceptives, including criteria tied to the recipient's marital status and age. Other factors that may affect the uptake of the intervention are primarily tied to the contraceptives themselves rather than the use of specific types of health workers, including a lack of knowledge about different methods of contraception; religious and o	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □	The interventions require relatively well-equipped facilities, including access to surgical instruments, surgical facility and resuscitation equipment. In addition, changes to norms or regulations may be needed to allow midwives to perform vasectomy. Training and regular supervision is also needed, and adequate referral to a higher level of care for further management may be necessary. However, a systematic review (Colvin 2012) suggests that ongoing support, training and supervision was often insufficient in midwife taskshifting programmes (moderate certainty evidence). Annex: page 20 (Colvin 2012)	



10.1. RECOMMENDATION:

Should ASSOCIATE CLINICIANS perform external cephalic version (ECV)?

Problem: Poor access to ECV

Option: Associated clinicians performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option in the context of rigorous research	We recommend the option		
	\square				
	We recommend against the use of associate clinicians to perform external cephalic version.				
Justification	There is insufficient evidence on the effectiveness of associate clinicians performing external cephalic version, the intervention is outside of their typical scope of practice and its acceptability and feasibility are uncertain.				
Implementation considerations	- Not applicable				
Monitoring and evaluation					
Research priorities					



10.1. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV

Option: Associated clinicians performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes □ □ □		
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies that assessed the effects of ECV for breech presenta (Hofmeyr GJ, 2010). However, none of the included studies appear to have involved associate of systematic review searched for studies that assessed the effects of midlevel providers, including clinicians, in improving the delivery of health care services (Lassi 2012). However, this review did any studies that assessed the effects of using associate clinicians to perform ECV. We are there to draw any conclusions about the desirable or undesirable effects of this intervention.	inicians. A associate not identify
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: A systematic review compared clinical officers (unclear what level of training they had) with media for caesarean section (Wilson 2011). The review identified 6 studies from low and middle income but the evidence is of very low certainty and we are therefore unable to draw conclusions on the	countries,
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	using clinical officers for caesarean section. Annex: page 18 (Wilson 2011)	
			Main resource requirements	
			Resource Settings in which associate clinicians already provide other	care
JSE	Are the		Training E.g. 1-2 weeks of practice training to assess foetal position and ECV	perform
SCE L	resources	No Probably Uncertain Probably Yes Varies no yes	Supervision and monitoring Regular supervision by senior midwife or doctor	
RESOURCE USE	required small?		Supplies Talcum powder. If ultrasound is available it may be helpful.	
RE			Referral Transportation to a centre where comprehensive emergency ob care (CeMOC) is available	stetric



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits? No Probably Uncertain Probably Yes Varies yes Uncertain Probably Yes Varies Yes Uncertain Probably Yes Varies Yes Yes Varies Yes Varies Yes Varies Yes Yes Varies Yes Varies Yes Varies Yes Varies Yes Yes Varies Yes Yes Varies Yes Varies Yes		Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A rapid review of literature on associate clinicians / advanced level associate clinicians programmes suggests that: - There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver - Associate clinicians/ advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic - There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: page 25 (Daniels 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □ □	The intervention requires very few supplies. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary, for instance if a caesarean section is needed. Delivrey of the interventions by associate clinicians may require changes to norms or regulations in some settings.	



11.7. RECOMMENDATIONS:

Should ASSOCIATE CLINICIANS perform vacuum extraction during childbirth?

Problem: Poor access to obstetric care

Option: Associate clinicians performing vacuum extraction **Comparison**: Procedure delivered by other cadres or no care

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
	We recommend against the use of associate clinicians to perform	vacuum extraction during childbirth	
Justification	There is insufficient evidence on the effectiveness of associate clir and feasibility are uncertain.	nicians performing vacuum extraction during childbirth, the intervention	is outside of their typical scope of practice and its acceptability
Implementation considerations	- Not applicable		
Monitoring and evaluation			
Research priorities	Studies are needed to assess the effects of associate clinici	ians performing vacuum extraction or manual removal of the pla	centa.



11.7. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS perform vacuum extraction during childbirth?

Problem: Poor access to obstetric care

Option: Associate clinicians performing vacuum extraction **Comparison**: Procedure delivered by other cadres or no care

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes			
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	clinicians, in improving the deli- any studies that assessed the	systematic review searched for studies that assessed the effects of midlevel providers, including associate linicians, in improving the delivery of health care services (Lassi 2012). However, this review did not identify ny studies that assessed the effects of using associate clinicians for these interventions. We are therefore nable to draw any conclusions about the desirable or undesirable effects of this intervention.	
	What is the certainty of the anticipated effects?	Very Low Moderate High direct evidence Iow Image: Control of the control	for caesarean section (Wilson :	clinical officers (unclear what level of training they had) with medical doctors 2011). The review identified 6 studies from low and middle income countries, certainty and we are therefore unable to draw conclusions on the effects of rean section.	
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 18 (Wilson 2011)		
			Main resource requirements		
			Resource	Settings in which associate clinicians already provide other care	
= USE	Are the	No Probably Uncertain Probably Yes Varies	Training	Training would need to include obstetric care such as delivering the baby, vacuum extraction procedures, understanding the physiology of the 3 rd stage of labour and the manual removal technique	
RESOURCE USE	resources required small?		Supervision and monitoring	Some monitoring and supervision by an obstetrician or a medical doctor with obstetric experience would be needed	
RE			Supplies	Antiseptic cleansing and antibiotics, vacuum extraction device	
			Referral	Referral to a higher facility (including for caesarean section in the case of vacuum extraction complications) essential since the procedures may fail regardless of manual skill	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that associate clinicians are trained to deliver associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: page 25 (Daniels 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	Vacuum extraction may be feasible after practical training. The intervention requires a vacuum extraction device and equipment for neonatal resuscitation. Adequate referral to a higher level of care for further management may also be necessary.	



11.8 to 11.10. RECOMMENDATION:

Should ASSOCIATE CLINICIANS deliver a loading dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility if appropriate; and (b) treat eclampsia and refer to a higher facility if appropriate?

Problem: Poor access to treatment for eclampsia

Option: Associate clinicians delivering loading dose of magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		☑		
	We suggest considering the use of associate clinicians to deliver to	the <u>loading dose</u> of magnesium sulphate to prevent and treat eclam	psia with targeted monitoring and evaluation	
Justification	Health Organization guideline recommends that for settings where	nicians delivering a loading dose of magnesium sulphate to prevent e it is not possible to administer the full magnesium sulphate regime ed for women with severe pre-eclampsia and eclampsia (very low q	n, the use of magnesium sulphate loading dose, followed by	
Implementation considerations	immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak recommendation) (WHO, 2011). The following should be considered when using associate clinicians to vacuum extraction or manual removal of the placenta: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers Clear scopes of practice are needed, and these need to be implemented at all levels of the health system. Linked to this, the distribution of roles and responsibilities between associate clinicians and other health workers needs to be made clear Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out Career progression may be an important motivator Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed Supplies of surgical instruments and other commodities need to be secure Responsibility for supervision needs to be clear and supervision needs to be regular and supportive Associate clinicians and their supervisors need to receive appropriate initial and ongoing training			
Monitoring and evaluation				
Research priorities	Studies of the effects and acceptability of associate clinicians deli-	vering magnesium sulphate for the prevention and treatment of ecla	mpsia	



11.8 and 11.10. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS deliver a loading dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility; and (b) treat eclampsia and refer to a higher facility if appropriate?

Problem: Poor access to treatment for eclampsia

Option: Associate clinicians delivering loading dose of magnesium

sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes □ □ □ □	Note: A World Health Organisation guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies yes	A systematic review searched for studies that assessed the effects of midlevel providers, including associate clinicians, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using associate clinicians for these interventions. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak
HARMS OF	What is the certainty of the	Very Low Moderate High No Varies low direct evidence	for experience compared clinical officers (unclear what level of training they had) with medical doctors regarding (a) which cadre should define the experience of the cadre should define the experience of the cadre should define the cadre should be cadred to cadre should be cadred to cadred the cadred	recommendation) (WHO, 2011). The guideline makes no reccommendation regarding (a) which cadre should deliver the loading or maintenance doses for
BENEFITS & F	anticipated effects?		but the evidence is of very low certainty and we are therefore unable to draw conclusions on the effects of using clinical officers for caesarean section.	preventing and treating eclampsia, and (b) what should be done when immediate
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 18 (Wilson 2011)	transfer to a higher-level facility is not possible following the loading dose.
			Main resource requirements	
			Resource Settings in which associate clinicians already provide other care	
RESOURCE USE	Are the	No Probably Uncertain Probably Yes Varies	Training I month of training for associate clinicians to diagnosis and manage eclampsia and pre-eclampsia	
URCE	resources required	no yes	Supervision and monitoring Regular supervision by senior midwife or doctor	
RESO	small?		Supplies Magnesium sulphate, calcium gluconate, IV equipment	
Ľ			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that associate clinicians are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: Page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a relatively small amount of training. Changes to norms, regulations and scopes of practice may be needed to allow associate clinicians to perform these procedures. Regular supervision is also necessary, and adequate referral to a higher level of care for management may be required.	



11.9 to 11.11. RECOMMENDATION:

Should ASSOCIATE CLINICIANS deliver a maintenance dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility if appropriate; and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Associate clinicians delivering maintenance dose of magnesium

sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
	We recommend against the use of associated clinicians to deliver	a maintenance dose of magnesium sulphate to prevent or treat eclam	ıpsia.	
Justification	There is insufficient evidence on the effectiveness of associate clinicians delivering a maintenance dose of magnesium sulphate to prevent or treat eclampsia and refer to a higher facility, the intervise outside of their typical scope of practice, and its acceptability is uncertain.			
Implementation considerations	Not applicable			
Monitoring and evaluation				
Research priorities	Studies of the effects and acceptability of associate clinicians deliv	ering magnesium sulphate for the prevention and treatment of eclamp	psia	



11.9 and 11.11. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS deliver a <u>maintenance dose</u> of magnesium sulphate to (a) <u>prevent</u> eclampsia and refer to a higher facility; and (b) <u>treat</u> eclampsia and refer to a higher facility if appropriate?

Problem: Poor access to treatment for eclampsia

Option: Associate clinicians delivering maintenance dose of magnesium

sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		Note: A World Health Organisation guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies yes	A systematic review searched for studies that assessed the effects of midlevel providers, including associate clinicians, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using associate clinicians for these interventions. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak
	What is the certainty of the anticipated effects?	Very Low Moderate High No Varies direct evidence	Indirect evidence: A systematic review compared clinical officers (unclear what level of training they had) with medical doctors for caesarean section (Wilson 2011). The review identified 6 studies from low and middle income countries, but the evidence is of very low certainty and we are therefore unable to draw conclusions on the effects of using clinical officers for caesarean section.	the review identified 6 studies from low and middle income countries, and we are therefore unable to draw conclusions on the effects of
	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes 🗆 🗖 🗖 🗖	Annex: page 18 (Wilson 2011)	transfer to a higher-level facility is not possible following the loading dose.
			Main resource requirements	
			Resource Settings in which associate clinicians already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training I month of training for associate clinicians to diagnosis and manage eclampsia and pre-eclampsia	
SOUR	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
RE	Small:	'	Supplies Magnesium sulphate, calcium gluconate, IV equipment	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
		!	<u>!</u>	!



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits? No Probably Uncertain Probably Yes Varies yes		Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 A rapid review of literature on associate clinician / advanced associate level clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that associate clinicians are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: Page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a relatively small amount of training. Changes to norms, regulations and scopes of practice may be needed to allow associate clinicians to perform these procedures. Regular supervision is also necessary, and adequate referral to a higher level of care for management may be required.	



11.13. RECOMMENDATIONS:

Should ASSOCIATE CLINICIANS perform caesarean sections?

Problem: Poor access to caesarean section

Option: Associate clinicians performing caesarean section **Comparison**: Caesarean section delivered by other cadres

Recommendation	We recommend against the option	We suggest considering the option targeted monitoring and evaluation	We recommend the option	
	Ø			
We recommend against the use of associate clinicians to perform caesarean section.				
Justification	There is insufficient evidence on the effectiveness of associate clinicians performing caesarean section. We are also uncertain about its acceptability and its feasibility in many settings as associate clinicians do not generally have surgical skills.			
Implementation considerations	Not applicable			
Monitoring and evaluation	oring and evaluation			
Research priorities	Studies are needed to assess the effects of associate clinicians performing caesarean section.			



11.13. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS perform caesarean sections?

Problem: Poor access to caesarean section

Option: Associate clinicians performing caesarean section **Comparison**: Caesarean section delivered by other cadres

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes				
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review compared clinical officers (unclear what level of training they had) with medical doctors for caesarean section (Wilson 2011). The review identified 6 studies from low and middle income countries, but the evidence is of very low certainty and we are therefore unable to draw conclusions on the effects of using clinical officers for caesarean section. Annex: page 18 (Wilson 2011)			
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct Varies evidence ☑ □ □ □ □ □				
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □				
			Main resource requirements			
			Resource	Settings in which associate clinicians already provide other care		
SE			Training	Several months of practice-based training in caesarean section		
RESOURCE USE	Are the resources required small?	No Probably Uncertain Probably Yes Varies Supervision and mornioling ves vired	Supervision and monitoring	Associate clinicians may operate without supervision but the procedure related morbidity and mortality should be regularly monitored. In addition, associate clinicians should have access to a doctor or highly experienced associate clinician for support		
_			Supplies	Facility with surgical and anaesthesia capacity, surgical instruments and supplies, drugs, resuscitation equipment		
			Referral	Referral essential in case of complications		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental No Probably Uncertain Probably Yes Cost small no Yes Probably Trelative to the benefits?		Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	 A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisabiliy of the findings are unclear. Annex: page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes □ □ □ □ □	The intervention requires well equipped facilities, including access to a surgical facility / theatre, surgical instruments and resuscitation equipment. In addition, changes to norms, regulations and scopes of practice are likely to be needed to allow associate clinicians to perform these procedures. Significant training and regular supervision is also necessary, and adequate referral to a higher level of care for management may be required.	



11.14. RECOMMENDATIONS:

Should ASSOCIATE CLINICIANS perform manual removal of the placenta?

Problem: Poor access to obstetric care

Option: Associate clinicians performing manual removal of the placenta

Comparison: Procedure delivered by other cadres or no care

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		✓		
	We suggest considering the option with targeted monitoring and e referral system is in place or can be put in place.	evaluation. We suggest using this intervention where associate clinic	ians are already an established cadre and where a well-functioning	
Justification		anual removal of the placenta is uncertain. We are also uncertain ab intervention has the potential to reduce inequalities by extending vit		
Implementation considerations	The following should be considered when using associate clinicians to vacuum extraction or manual removal of the placenta: - The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers - Clear scopes of practice are needed, and these need to be implemented at all levels of the health system. Linked to this, the distribution of roles and responsibilities between associate clinicians and other health workers needs to be made clear - Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out - Career progression may be an important motivator - Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed - Supplies of surgical instruments and other commodities need to be secure - Responsibility for supervision needs to be clear and supervision needs to be regular and supportive - Associate clinicians and their supervisors need to receive appropriate initial and ongoing training			
Monitoring and evaluatio	n			
Research priorities	Studies are needed to assess the effects of associate clinicians pe	performing vacuum extraction or manual removal of the placenta.		



11.14. EVIDENCE BASE:

Should ASSOCIATE CLINICIANS perform manual removal of the placenta?

Problem: Poor access to obstetric care

Option: Associate clinicians performing manual removal of the placenta

Comparison: Procedure delivered by other cadres or no care

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies yes			
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	clinicians, in improving the deli- any studies that assessed the	for studies that assessed the effects of midlevel providers, including associate very of health care services (Lassi 2012). However, this review did not identify effects of using associate clinicians for these interventions. We are therefore one about the desirable or undesirable effects of this intervention.	
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High direct evidence Iow Image: Control of the control	for caesarean section (Wilson :	clinical officers (unclear what level of training they had) with medical doctors 2011). The review identified 6 studies from low and middle income countries, certainty and we are therefore unable to draw conclusions on the effects of rean section.	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 18 (Wilson 2011)		
			Main resource requirements		
			Resource	Settings in which associate clinicians already provide other care	
= USE	Are the	No Probably Uncertain Probably Yes Varies	Training	Training would need to include obstetric care such as delivering the baby, vacuum extraction procedures, understanding the physiology of the 3 rd stage of labour and the manual removal technique	
RESOURCE USE	resources required small?		Supervision and monitoring	Some monitoring and supervision by an obstetrician or a medical doctor with obstetric experience would be needed	
RE			Supplies	Antiseptic cleansing and antibiotics, vacuum extraction device	
			Referral	Referral to a higher facility (including for caesarean section in the case of vacuum extraction complications) essential since the procedures may fail regardless of manual skill	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes □ □ □	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	 A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes □ □ □ ☑ □ □	Manual removal of the placenta may be feasible after theoretical and practical training. The intervention requires antiseptic cleansing. Adequate referral to a higher level of care for further management may also be necessary	



10.1. RECOMMENDATION:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS perform external cephalic version (ECV)?

Problem: Poor access to ECV

Option: Advanced level associate clinicians performing ECV **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option only in the context of rigorous research	We recommend the option	
		\square		
	We suggest considering the option in the context of rigorous researand where a well-functioning referral system is in place or can be		advanced level associate clinicians are already an established cadre	
Justification	There is insufficient evidence on the effectiveness of advanced level associate clinicians performing external cephalic version. It may be feasible and may reduce inequalities by extending care to underserved populations, but acceptability may vary.			
Implementation considerations	- Not applicable			
Monitoring and evaluation				
Research priorities				



10.1. EVIDENCE BASE:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV

Option: Advanced level associate clinicians performing ECV **Comparison**: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES	
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review searched for studies th	one systematic review searched for studies that assessed the effects of ECV for breech presentation at term		
	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □	(Hofmeyr GJ, 2010). However, none of the incl associate clinicians. A systematic review search including advanced level associate clinicians, in However, this review did not identify any studied clinicians to perform ECV. We are therefore u	ofmeyr GJ, 2010). However, none of the included studies appear to have involved advanced level sociate clinicians. A systematic review searched for studies that assessed the effects of midlevel providers, duding advanced level associate clinicians, in improving the delivery of health care services (Lassi 2012). wever, this review did not identify any studies that assessed the effects of using advanced level associate nicians to perform ECV. We are therefore unable to draw any conclusions about the desirable or		
	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □ □	undesirable effects of this intervention. Indirect evidence: A systematic review compared clinical officers for caesarean section (Wilson 2011). The revie but the evidence is of very low certainty and we			
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	using clinical officers for caesarean section. Annex: page 18 (Wilson 2011)			
			Main resource requirements			
			Resource Settings in w provide othe	hich advanced level associate clinicians already r care		
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training E.g. 1-2 week ECV	s of practice training to assess foetal position and perform		
OURC	required	no yes	Supervision and monitoring Regular supe	vision by senior midwife or doctor		
RES	small?		Supplies Talcum powd	er. If ultrasound is available it may be helpful.		
			Referral Transportation care (CeMOC	n to a centre where comprehensive emergency obstetric) is available		



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes □ □ □	 A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies no yes □ □ □ □ □	The intervention requires very few supplies. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary, for instance if a caesarean section is needed. Delivrey of the interventions by advanced level associate clinicians may require changes to norms or regulations in some settings.	



11.7 and 11.14. RECOMMENDATIONS:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS perform (a) vacuum extraction during childbirth and (b) manual removal of the placenta?

Problem: Poor access to obstetric care

Option: Advanced level associate clinicians performing vacuum extraction and

manual removal of the placenta

Comparison: Procedure delivered by other cadres or no care

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
			\square			
	We recommend this option. We suggest implementing this intervention where advanced level associate clinicians with obstetric skills are already an established cadre and where a well-functioning referral system is in place or can be put in place.					
Justification	There is insufficient evidence on the effectiveness of advanced level associate clinicians performing vacuum extraction during childbirth or performing manual removal of the placenta and acceluncertain. However, advanced level associate clinicians are likely to have the necessary obstetric skills, the intervention is probably feasible and it may also reduce inequalities by extending calunderserved populations.					
Implementation considerations	The following should be considered when using advanced level associate clinicians to vacuum extraction or manual removal of the placenta: - The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers - Clear scopes of practice are needed, and these need to be implemented at all levels of the health system. Linked to this, the distribution of roles and responsibilities between associate clinicians and other health workers needs to be made clear - Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out - Career progression may be an important motivator - Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed - Supplies of surgical instruments and other commodities need to be secure - Responsibility for supervision needs to be clear and supervision needs to be regular and supportive - Associate clinicians and their supervisors need to receive appropriate initial and ongoing training					
Monitoring and evaluation						
Research priorities	Studies are needed to assess the effects of advanced level associated associa	ciate clinicians performing vacuum extraction or manual removal of th	ne placenta.			



11.7 and 11.14. EVIDENCE BASE:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS perform (a) vacuum extraction during childbirth and (b) manual removal of the placenta?

Problem: Poor access to obstetric care

Option: Advanced level associate clinicians performing vacuum

extraction and manual removal of the placenta

Comparison: Procedure delivered by other cadres or no care

	CRITERIA	JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes			
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including advanced evel associate clinicians, in improving the delivery of health care services (Lassi 2012). However, this review lid not identify any studies that assessed the effects of using advanced level associate clinicians for these nterventions. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence □ □ □ □ □ □ □ □	for caesarean section (Wilson	clinical officers (unclear what level of training they had) with medical doctors 2011). The review identified 6 studies from low and middle income countries, certainty and we are therefore unable to draw conclusions on the effects of rean section.	
BENE	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes □ □ □	Annex: page 18 (Wilson 2011)		
			Main resource requirements		
			Resource	Settings in which advanced level associate clinicians already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies no yes	Training	Training would need to include obstetric care such as delivering the baby, vacuum extraction procedures, understanding the physiology of the 3 rd stage of labour and the manual removal technique	
	required small?		Supervision and monitoring	Some monitoring and supervision by an obstetrician or a medical doctor with obstetric experience would be needed	
			Supplies	Antiseptic cleansing and antibiotics, vacuum extraction device	
			Referral	Referral to a higher facility (including for caesarean section in the case of vacuum extraction complications) essential since the procedures may fail	

World	Health
Organ	ization

			regardless of manual skill	
	•		•	
	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: page 25 (Daniels 2012)	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	Vacuum extraction: may be feasible after practical training. The intervention requires a vacuum extraction device and equipment for neonatal resuscitation. Adequate referral to a higher level of care for further management may also be necessary Manual removal of the placenta: may be feasible after theoretical and practical training. The intervention requires antiseptic cleansing. Adequate referral to a higher level of care for further management may also be necessary	



11.8 to 11.10. RECOMMENDATION:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS deliver a loading dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility; and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Advanced level associate clinicians delivering loading dose of

magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option	
		☑		
	We suggest considering the use of advanced level associated clin	nicians to deliver the <u>loading dose</u> of magnesium sulphate to preven	t and treat eclampsia with targeted monitoring and evaluation.	
Justification	There is insufficient evidence on the effectiveness of advanced level associated clinicians delivering a loading dose of magnesium sulphate to prevent or treat eclampsia and refer to a higher facility. However, a World Health Organization guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak recommendation) (WHO, 2011).			
Implementation considerations	ntation The following should be considered when using advanced level associated clinicians to vacuum extraction or manual removal of the placenta:		eptability among affected health workers the distribution of roles and responsibilities between advanced level ct any changes in scope of practice. Giving incentives for certain	
Monitoring and evaluatio	n			
Research priorities	Studies of the effects and acceptability of advanced level associate	ted clinicians delivering magnesium sulphate for the prevention and	treatment of eclampsia	



11.8 and 11.10. EVIDENCE BASE:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS deliver a <u>loading dose</u> of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility; and (b) treat eclampsia and refer to a higher facility?

Problem: Poor access to treatment for eclampsia

Option: Advanced level associate clinicians delivering loading dose of

magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA		JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	A systematic review searched for studies that assessed the effects of midlevel providers, including advanced level associate clinicians, in improving the delivery of health care services (Lassi 2012). However, this review did not identify any studies that assessed the effects of using advanced level associate clinicians for these interventions. We are therefore unable to draw any conclusions about the desirable or undesirable effects of this intervention.	
OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes		immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak
BENEFITS & HARMS OF	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: A systematic review compared clinical officers (unclear what level of training they had) with medical doctors for caesarean section (Wilson 2011). The review identified 6 studies from low and middle income countries, but the evidence is of very low certainty and we are therefore unable to draw conclusions on the effects of using clinical officers for caesarean section.	recommendation) (WHO, 2011). The guideline makes no reccommendation regarding (a) which cadre should deliver the loading or maintenance doses for preventing and treating eclampsia, and (b) what should be done when immediate
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 18 (Wilson 2011)	transfer to a higher-level facility is not possible following the loading dose.
			Main resource requirements	
111			Resource Settings in which advanced level associated clinicians already provide other care	
RESOURCE USE	Are the resources	No Probably Uncertain Probably Yes Varies	Training I month of training for advanced level associated clinicians to diagnosis and manage eclampsia and pre-eclampsia	
ESOU	required small?		Supervision and monitoring Regular supervision by senior midwife or doctor	
₩			Supplies Magnesium sulphate, calcium gluconate, IV equipment	
			Referral Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	
				:



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?		Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 A rapid review of literature on associate clinician / advanced level associate clinician programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: Page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a relatively small amount of training. Changes to norms, regulations and scopes of practice may be needed to allow advanced level associated clinicians to perform these procedures. Regular supervision is also necessary, and adequate referral to a higher level of care for management may be required.	



11.9 to 11.11. RECOMMENDATION:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS deliver a maintenance dose of magnesium sulphate to (a) prevent eclampsia and refer to a higher facility if appropriate; and (b) treat eclampsia and refer to a higher facility if appropriate?

Problem: Poor access to treatment for eclampsia

Option: Advanced level associated clinicians delivering maintenance dose of

magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to health professionals

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option
		☑	
We suggest considering this option with targeted monitoring and evaluation. We suggest using this intervention in settings where advanced level associate and it is not routinely possible to access more specialized cadres.			ranced level associate clinicians are working alone in primary care
Justification	There is insufficient evidence on the effectiveness and acceptability of advanced level associated clinicians delivering a maintenance dose of magnesium sulphate to prevent or treat eclampsia and refer to a higher facility. However, this intervention is probably feasible and may reduce inequalities by extending care to underserved populations.		
Implementation considerations			
Monitoring and evaluation			
Research priorities	Studies of the effects and acceptability of advanced level associate	te clinicians delivering magnesium sulphate for the prevention and t	reatment of eclampsia



11.9 and 11.11. EVIDENCE BASE:

Should ADVANCED LEVEL ASSOCIATE CLINICIANS deliver a <u>maintenance dose</u> of magnesium sulphate to (a) <u>prevent</u> eclampsia and refer to a higher facility if appropriate; and (b) <u>treat</u> eclampsia and refer to a higher facility if appropriate?

Problem: Poor access to treatment for eclampsia

Option: Advanced level associated clinicians delivering maintenance

dose of magnesium sulphate

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

CRITERIA		JUDGEMENT	EVIDENCE		COMMENTS AND QUERIES
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes		Note: A World Health Organisation guideline recommends that for settings where it is not possible to administer the full magnesium sulphate regimen, the use of magnesium sulphate loading dose, followed by immediate transfer to a higher-level health facility, is recommended for women with severe pre-eclampsia and eclampsia (very low quality evidence, weak recommendation) (WHO, 2011). The guideline makes no reccommendation regarding (a) which cadre should deliver the loading or maintenance doses for preventing and treating eclampsia, and (b) what should be done when immediate transfer to a higher-level facility is not possible following the loading dose.	
THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes □ □ □	A systematic review searched level associated clinicians, in in review did not identify any study these interventions. We are the undesirable effects of this in		
BENEFITS & HARMS OF THE OPTIONS	What is the certainty of the anticipated effects?	Very Low Moderate High No direct evidence	Indirect evidence: A systematic review compared for caesarean section (Wilson but the evidence is of very low using clinical officers for caesa		
BENEF	Are the desirable effects large relative to the undesirable effects?	No Probably Uncertain Probably Yes Varies no yes	Annex: page 18 (Wilson 2011		
	Are the resources required small?		Main resource requirements		
111			Resource	Settings in which advanced level associated clinicians already provide other care	
RESOURCE USE		No Probably Uncertain Probably Yes Varies	Training	I month of training for advanced level associated clinicians to diagnosis and manage eclampsia and pre-eclampsia	
SOU			Supervision and monitoring	Regular supervision by senior midwife or doctor	
꼾			Supplies	Magnesium sulphate, calcium gluconate, IV equipment	
			Referral	Transportation to a centre where comprehensive emergency obstetric care (CeMOC) is available	



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	Uncertain as there is no direct evidence on effectiveness	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 A rapid review of literature on associate clinicians / advanced level associate clinicians programmes suggests that: There may be a lack of acceptance of associate clinicians / advanced level associate clinicians among other professionals and professional bodies in a number of settings, and these bodies may block the development of the cadre or attempt to restrict what they can do. Acceptance appears to vary across procedures that they are trained to deliver Associate clinicians / advanced level associate clinicians may not be given recognition and respect from doctors and health administrators, despite doing work similar to that done by doctors, and this is seen as problematic There may be discrepancies between acceptance at national ministry level, existing regulations for registration of associate clinicians / advanced level associate clinicians, the training they receive and clinical practice. Consequently, they may only be able to undertake a proportion of what they were trained to do in relation to emergency and comprehensive obstetric care or may be perform services without regulatory authorisation The certainty of this evidence is unclear as the quality of the contributing studies and the generalisability of the findings are unclear. Annex: Page 25 (Daniels 2012) 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires relatively few supplies (magnesium sulphate, calcium gluconate and IV equipment). In addition, it is simple to deliver and requires only a relatively small amount of training. Changes to norms, regulations and scopes of practice may be needed to allow advanced level associate clinicians to perform these procedures. Regular supervision is also necessary, and adequate referral to a higher level of care for management may be required.	



10.1. RECOMMENDATION:

Should NON-SPECIALIST DOCTORS perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV

Option: Non-specialist doctors performing ECV Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor access to

Recommendation	We recommend against the option	We suggest considering the option with targeted monitoring and evaluation	We recommend the option			
		☑				
	We suggest considering the use of non-specialist doctors to perform ECV for breech presentation at term with targeted monitoring and evaluation					
Justification	The available evidence suggests that the use of non-specialist doctors to perform ECV has important benefits, and is likely to be acceptable and feasible.					
Implementation considerations	The following should be considered when using non-specialist doctors to deliver ECV: The relevant professional bodies should be involved in the planning and implementation of the intervention to ensure acceptability among affected health workers Clear scopes of practice are needed, and these need to be implemented at all levels of the health system. Linked to this, the distribution of roles and responsibilities between non-specialist doctors and other health workers needs to be made clear Supervision and support need to be in place Referral systems need to function well, i.e. financial, logistical (e.g. transport) and relational barriers need to be addressed Non-specialist doctors need to receive appropriate training Implementation needs to be in the context of a comprehensive remuneration scheme, in which salaries or incentives reflect any changes in scope of practice. Giving incentives for certain tasks but not for others may negatively affect the work that is carried out					
Monitoring and evaluation	uation Monitoring and evaluation should assess providers' confidence to deliver the procedure; success rate of procedure; any complications					
Research priorities						



10.1. EVIDENCE BASE:

Should NON-SPECIALIST DOCTORS perform external cephalic version (ECV) for breech presentation at term?

Problem: Poor access to ECV

Option: Non-specialist doctors performing ECV

Comparison: Care delivered by other cadres or no care

Setting: Community/primary health care settings in LMICs with poor

	CRITERIA	JUDGEMENT	EVIDENCE			COMMENTS AND QUERIES		
	Are the anticipated desirable effects large?	No Probably Uncertain Probably Yes Varies no yes	One systematic review search (Hofmeyr GJ, 2010). The revie and non-specialist doctors. The and caesarean section (moder evidence). However, it may ma					
BENEFITS & HARMS OF THE OPTIONS	Are the anticipated undesirable effects small?	No Probably Uncertain Probably Yes Varies no yes	review also notes that there is external cephalic version at ter					
THE (Outcomes	No ECV (per 1000)	ECV (per 1000)	Difference (per 1000)	Certainty of the anticipated effect	
RMS OF	What is the certainty of the	Very Low Moderate High No direct Varies low	Non-cephalic births	756	348	408 fewer	⊕⊕⊕ Moderate	
rs & HAI	anticipated effects?		Caesarean section	296	187	109 fewer	⊕⊕⊕○ Moderate	
BENEF!	Are the		Neonatal admission	111	40	71 fewer	⊕⊕○○ Low	
_	desirable effects large relative to the	No Probably Uncertain Probably Yes Varies no yes	Perinatal death	8	3	5 fewer	⊕⊕○○ Low	
	undesirable effects?		Annex: page 3 (Hofmeyr 2010))				
ш		No Probably Uncertain Probably Yes Varies no yes	Resource	Settings in which non-specialist doctors already provide other care		y provide other care		
RESOURCE USE	Are the resources		Training	E.g. 1-2 weeks of practice training to assess foetal position and perform ECV				
SOU	required small?		Supervision and monitoring	Regular supervision by senior doctor				
RE			Supplies	Talcum powde	Talcum powder. If ultrasound is available it may be helpful.		helpful.	
			Referral	Transportation	Transportation to a centre where CeMOC is available			



	CRITERIA	JUDGEMENT	EVIDENCE	COMMENTS AND QUERIES
	Is the incremental cost small relative to the benefits?	No Probably Uncertain Probably Yes Varies no yes	The resources required for non-specialist doctors to perform ECV are small and the available evidence suggests important benefits.	
ACCEPTABILITY	Is the option acceptable to most stakeholders?	No Probably Uncertain Probably Yes Varies no yes	 Evidence on the acceptability of non-specialist doctors performing ECV was not reviewed. The following factors should be considered: Basic training in obstetrics is part of core medical training in most settings and, in many settings, non-specialist doctors provide routine care for women during pregnancy. This could be extended to include ECV where indicated Women are likely to consider the option acceptable, particularly in settings where access to specialist doctors is limited and / or most routine pregnancy care is conducted by non-specialist doctors Where ECV is currently conducted largely by specialist doctors (obstetricians), this group may not consider the option acceptable or safe. In some settings this shifting of tasks may also have revenue implications for specialist doctors. However, general medical and midwife professional associations are unlikely to object to this option 	
FEASIBILITY	Is the option feasible to implement?	No Probably Uncertain Probably Yes Varies yes	The intervention requires very few supplies. In addition, it is unlikely to require changes to norms or regulations. Some training and supervision is needed, and adequate referral to a higher level of care for further management may also be necessary, for instance if a caesarean section is needed.	