QUESTION

POPULATION:	In neonates requiring resuscitation in any setting
INTERVENTION:	Does family presence during resuscitation
COMPARISON:	Compared to no family presence during resuscitation
MAIN OUTCOMES:	Result in improved patient outcomes (short and long term), family-centered outcomes (short and long term, perception of the resuscitation), and health care provider-centered outcomes (perception of the resuscitation, psychological stress
SETTING:	In-hospital (any setting) or out-of-hospital
PERSPECTIVE:	Population
BACKGROUND:	Whilst family presence during neonatal resuscitation is practiced in some settings, it has never undergone systematic review and practice varies internationally. During the COVID-19 pandemic some services have moved neonatal resuscitation sites to locations separated from parents making this question a priority for the Neonatal Life Support Task Force. Therefore the NLS Task force chose to be nodal to this pediatric task force high priority question.
CONFLICT OF INTERESTS:	None

ASSESSEMENT

Problem
Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know	Whilst common practice in some settings and some countries is for neonates requiring resuscitation to receive it in the birthing room, this is not universal. The effect of parental presence during resuscitation at birth or at other locations during the neonatal period has never been subjected to systematic review.	International practice varies due to culture, facilities and practice traditions. COVID-19 has meant that parents and their babies may be separated at birth in the presence of maternal COVID-19 positivity.

Desirable Effects

How substantial are the desirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know	Parents report being more aware of events and are not on the whole uncomfortable being present as long was well supported and informed. Partners do not have to leave mother and can be present with both. Parents and health care providers report a requirement for training to support parental presence during resuscitation. Communication is a key feature related by both groups. Some fathers were worried, distressed, petrified, panic-stricken or scared. However, none regretted being present {Harvey 2012 F439}. Even observational data from surveys lacks comparison groups. One study suggested that perceived health care professional workload was reduced if a family member was present during resuscitation/stabilization {Zehnder 2020 F1}	The judgement of trivial here does not mean that the experiences or potential effects upon parents are trivial. It refers to the quality of evidence available for any of the relevant outcomes. Almost all studies were selection biased in terms of who was approached and who actually reported. There was much discussion in the group as to whether this should be “Trivial” or “Don’t know, however, one well designed study did find advantages in terms of parental presence reducing retrospectively perceived professional workload { Zehnder 2020 F1}. Need to be aware that few parents report remembering events specifically but are aware of “feelings” and “emotions”. {Harvey 2012 F439}. Communication and training is key but presence allows family involvement, confidence in care and awareness of “what was going on”{Sawyer 2015 e008495}. One large study of 60 parents found none who were uncomfortable with stabilization or resuscitation procedures {Katheria 2018 100}, However, this was part of a prepared interventional study and therefore support would have been high. All evidence is from only 8 papers from high resource services in three countries UK, USA and Canada.

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large ○ Moderate ○ Small ○ Trivial ○ Varies ● Don't know	Both health care providers and parents voice some concerns that parental presence may affect the performance of resuscitation teams {Yoxall 2015 e008494, Sawyer 2015 e008495, Harvey 2013 27} although there is no direct evidence for this. Furthermore, this was not borne out by the only study which was directed at workload of health care providers {Zehnder 2020 F1} Some fathers were worried, distressed, petrified, panic-stricken or scared. However, none regretted being present {Harvey 2012 F439}.	Health care providers felt that effect on staff less likely with increased experience {Harvey 2013 27, Yoxall 2015 e008494} All evidence is from only 8 papers, all from high resource services in three countries UK, USA and Canada.

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies	The certainty of evidence is very low due to the risk of bias in the available studies and because none of the PICOST questions originally posed was addressed by the included studies. Different techniques and approaches were used with selected groups. Apart from one paper {Zehnder 2020 F1} in which the methodology was well described, methodologies were neither sufficiently described nor validated. Therefore comparisons and relevance is impossible to judge. All evidence is from only 8 papers from high resource services in three countries UK, USA and Canada.	There is no evidence available comparing different settings, level of resources, or cultural and training aspects.

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT		ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ○ Possibly important uncertainty or variability ○ Probably no important uncertainty or variability	Parents and health care providers are likely to value the outcomes included in this systematic review {Strand 2019 F328}	

● No important uncertainty or variability		

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ● Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know	There is insufficient evidence to indicate an interventional effect on patient or family outcome. Being present during the resuscitation of their baby seems to be a positive experience for some parents but concerns about an effect upon performance exist in health care providers and family members. We suggest it is reasonable for mothers/fathers/partners to be present during the resuscitation of neonates where circumstances, facilities and parental inclination allow. This is a weak recommendation based on very low certainty of evidence.	In the review of pediatric FPDR, the findings reflected that, being present during the resuscitation of their child, was a very helpful experience for parents. In all studies, parents who were present discussed their belief that their presence brought their child comfort and that it helped them to adjust to the loss of their child when that occurred {Ebrahim 2013 40, Maxton 2008 3168, McGahey-Oakland 2007 217, Stewart 2019 58, Tinsley 2008 e799}. This is especially true for one which compared parents who had been present vs those who had not {Tinsley 2008 e799} In a neonatal setting the only available evidence suggested that the perceived health care providers workload might be reduced by parental presence {Zehnder 2020 F1}

Resources required

How large are the resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS

○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ○ Varies ● Don't know	No studies were identified specifically comparing resources including costs required for either parental presence or absence at resuscitation. The mother is always present at birth. However, parents and health care providers highlighted the need for training and personnel to support parental presence. There are no data to assess the resources needed to provide this.	Cost may be greater if changes in architecture or furnishings are required (e.g. to provide a separate area for resuscitation) or for healthcare practitioner education and training if a change of practice was required. The need for parental support and staff training was identified in included studies

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ○ Moderate ○ High ● No included studies	No studies were identified comparing resources including costs between the two interventions.	Resource requirement may be greater if a separate area is required for resuscitation.

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies	No studies were identified comparing cost-effectiveness between the two interventions. However, parents and health care providers highlighted the need for training to support parental presence.	

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS

○ Reduced ○ Probably reduced ○ Probably no impact ○ Probably increased ○ Increased ○ Varies ● Don't know	No studies were identified addressing health equity. All included studies were performed in UK, USA or Canada (high resource settings). There were no data available from medium or low resource settings or varied cultural settings.	

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ●Probably yes ○Yes ○ Varies ○ Don't know	Whilst family presence during neonatal resuscitation is practiced in some settings, practice varies internationally. All included studies were performed in UK, USA or Canada (high resource, culturally similar settings).	Parents and healthcare providers highlight the need for training in order to support parental presence.

Feasibility

Is the intervention feasible to implement?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ○ Yes ● Varies ○ Don't know	No studies were identified addressing feasibility in neonatal resuscitation. Whilst family presence during neonatal resuscitation is practiced in some settings, practice varies internationally. Implementation would depend upon resources, facilities, and different socioeconomic, cultural and organizational settings.	

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial		Varies	**Don't know**

	JUDGEMENT						
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	**No important uncertainty or variability**			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	**Does not favor either the intervention or the comparison**	Probably favors the intervention	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	**Don't know**
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	Varies	**Don't know**
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		**Varies**	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	Conditional recommendation for the intervention	Strong recommendation for the intervention
○	●	○		○

CONCLUSIONS

Recommendation

We suggest it is reasonable for mothers and fathers (or their partners) to be present during the resuscitation of neonates where circumstances, facilities and parental inclination allow. This is a weak recommendation based on very low certainty of evidence.

There is insufficient evidence to indicate an interventional effect on patient or family outcome. Being present during the resuscitation of their baby seems to be a positive experience for some parents but concerns about an adverse effect upon performance exist among both healthcare providers and family members.

Justification

In making these recommendations, the Neonatal Life Support Task Force considered the following:

- Whilst family presence during neonatal resuscitation is practiced in some settings, it has never undergone systematic review and practice varies internationally. During the COVID-19 pandemic some services have moved neonatal resuscitation sites to locations separated from parents making this question a priority for the Neonatal Life Support Task Force.
- All the included papers originate in the UK, USA or Canada.
- All the included papers related to resuscitation at birth.
- Mothers are always present at birth and it seems that most healthcare providers surveyed in included publications feel partner/support person presence should be offered but with the caveat that facilitation and support of the families requires sufficient numbers and training of health care personnel.

- Of note, we did not identify any eligible randomized controlled trials or large cohort studies comparing family presence to no family presence during neonatal resuscitation. We acknowledge the lack of clinical trial data for this topic in our knowledge gaps.
- It is notable that the evidence came from the opinions of only 144 parents and 350 health care providers in total, all sampled in tertiary centres in the UK, USA or Canada.

Subgroup considerations

There is insufficient data to address different gestations and subgroups of neonates requiring resuscitation. There is insufficient data to address different locations, such as within the NICU, emergency department or different socioeconomic and cultural settings.

Implementation considerations

Although still a relatively uncommon occurrence, some respiratory intervention is needed in up to 5% of infants at birth. Mothers are, of course, always present at birth, but the presence of other family members and indeed the presence of any family members during neonatal resuscitation varies around the world. There is insufficient evidence available to advise any change of current practice.

Monitoring and evaluation

Adverse events should be monitored and reported.

Research priorities

KNOWLEDGE GAPS

There were no studies identified that provided adequate comparative data to address this PICO question in the setting of a neonate receiving resuscitation at birth or within the first month of life. The majority of published work used retrospective survey or qualitative methods and included births where resuscitation was not required. There would be serious ethical constraints on performing a randomized controlled trial to address this question, among which would be the extreme difficulty of obtaining informed consent. Therefore, larger scale observational studies with appropriate quantitative and qualitative outcome and experience measures are recommended. In addition to addressing parent- and health care provider-centered outcomes, studies are needed to address whether or not family presence affects the outcome of a resuscitation and whether family presence impacts decisions to continue or discontinue resuscitation.

The included studies all came from delivery rooms studied in high resource settings. Subsequent studies are needed that recruit from different socioeconomic, cultural and organizational settings.

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