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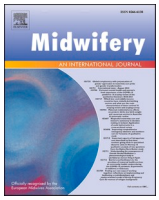

Consensus-based recommendations for the care of women with a breech presenting fetus

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ABSTRACT

Objective: To establish consensus related to aspects of breech presentation and care.
Design: A multinational, three round e-Delphi study.
Participants: A panel of 15 midwives, four obstetricians and an academic with knowledge and/or experience of caring for women with a breech presenting fetus.
Methods: An initial survey of 45 open-ended questions. Answers were coded and amalgamated to form 448 statements in the second round and three additional statements in the third round. Panellists were asked to provide their level of agreement for each statement using a 5-point Likert scale. Consensus was deemed met if 70% of panellists responded with strongly agree to somewhat agree, or strongly disagree to somewhat disagree after the second round.
Findings: Results led to the development of a consensus-based care pathway for women with a breech presenting fetus and a skills development framework for clinicians.
Key conclusions: A cultural shift is beginning to occur through the provision of physiological breech workshops offered by various organisations and may result in greater access to skilled and experienced clinicians for women desiring a vaginal breech birth, ultimately improving the safety of breech birth.
Implications for practices: The care pathway and skills development framework can be used by services wishing to make changes to their current practices related to breech presentation and increase the level of skill in their workforce.

Introduction

Breech birth has long been a contentious subject, fuelling clinical and public debate. The publication of the *Term Breech Trial (TBT) (Hannah et al., 2004)*, with the recommendation of Caesarean Section (C/S) as the 'safest' mode of birth for breech presenting fetuses rapidly altering breech birth management on a global scale (Morris et al., 2018). As a direct consequence, 92.5% of maternity services across 23 countries changed their practice (Hogle et al., 2003). In Australia and New Zealand, there has been a 52% decrease in the provision of Vaginal Breech Birth (VBB) services (Phipps et al., 2003). Despite significant criticism regarding the validity of the TBT, the trials' authors' endorsement of C/S as the safest birth mode for breech, coupled with the withdrawal of VBB services has led to a limitation in birth choices for women and a loss of VBB skills in the workforce (Morris et al., 2018). Since then, a culture of fear has surrounded breech birth, perpetuated by the media which champions the relative safety of C/S while focussing on the perceived danger of VBB (Morris et al., 2021c; Petrovska et al., 2017). However, VBB continues to occur, and women actively seek supportive service providers when their wishes differ from what is considered standard management (Homer et al., 2015). The experiences of clinicians providing care of women with a breech presentation has been explored in previous studies (Founds, 2007; Sloman et al., 2016). Founds (2007), reported obstetricians viewed a breech presenting fetus as an abnormality, while the midwives in Sloman et al. (2016) viewed breech presentation as an unusual norm. The difference in perceptions of breech presentation may be due to the differing professions' philosophies or location of practice (Jamaica versus the United Kingdom [UK]) and accessibility to resources when complications arise. While some clinicians support women's right to choose (Catling et al., 2016), others

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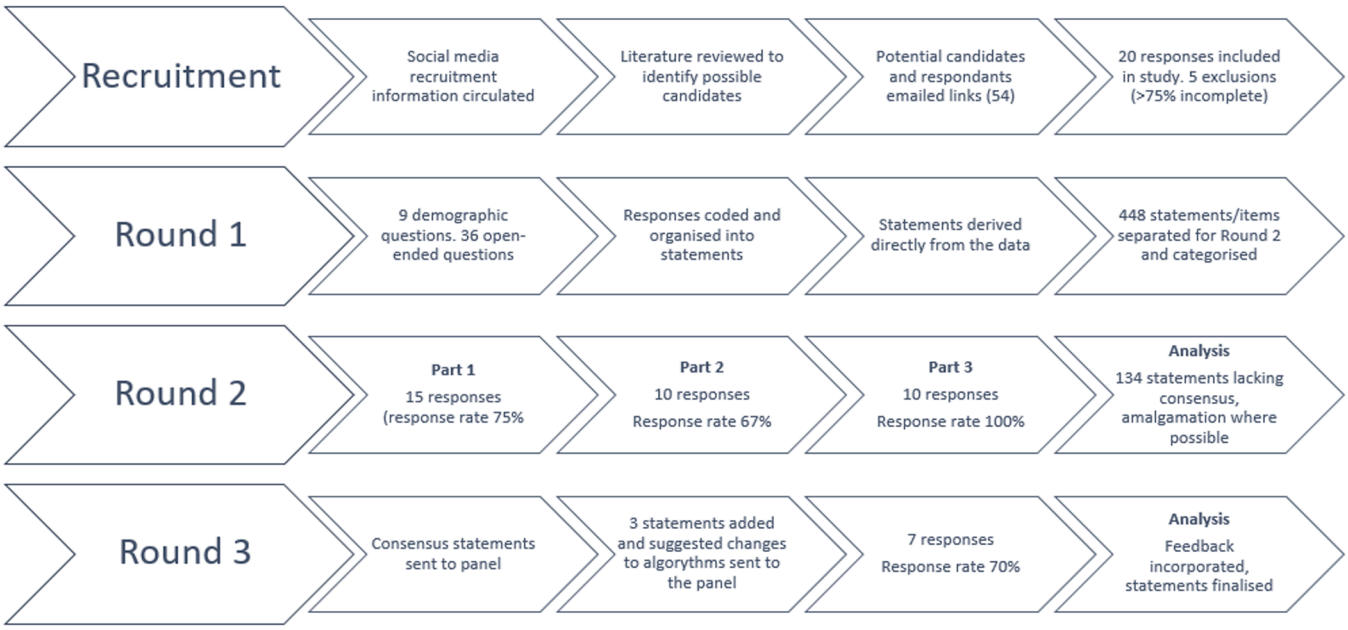

Fig. 1. Delphi Process.

argue that natural birth ideologies are exposing women and their fetuses to unnecessary risk (Dietz and Exton, 2016).

With such a continuum of ideas and opinions co-existing, what is considered the optimal pathway of care for women experiencing a breech presenting fetus at term? This article reports the findings of a multi-national electronic Delphi (e-Delphi) exploring different aspects of breech presentation and birth. It focusses on recommended care for women with a breech presenting fetus at term and a clinical skills framework formulated from data collected in a three-round e-Delphi study panelled by fifteen midwives, four obstetricians and one academic. This article offers an insight into panel members' recommendations of care during the antenatal and intrapartum period.

Methods

A comprehensive outline of the methods involved in this study has previously been published through open access (Morris et al., 2021b). As such, only a brief summary is provided here, with additional detail where appropriate.

Table 1
Participant codes and panel composition.

Participant code	Profession	Location
AC1	Academic	USA
MW1	Midwife	United Kingdom
MW2	Midwife	Oklahoma, USA
MW3	Midwife	Wisconsin, USA
MW4	Midwife	Western Australia
MW5	Midwife	Western Australia
MW6	Midwife	United Kingdom
MW7	Midwife	Western Australia
MW8	Midwife	Western Australia
MW9	Midwife	Oxford, United Kingdom
MW10	Midwife	Newcastle, New South Wales, Australia
MW11	Midwife	England, United Kingdom
MW12	Midwife	Ontario, Canada
MW13	Midwife	Queensland, Australia
MW14	Midwife	London, England
MW15	Midwife	London, United Kingdom
OB1	Obstetrician	Aalesund, Norway
OB2	Obstetrician	Western Australia
OB3	Obstetrician	Denmark
OB4	Obstetrician	North Carolina, USA

The e-Delphi process and analysis

The Delphi technique has been used previously in the exploration of breech presentation and other health related phenomenon (Keeney et al., 2011; Walker et al., 2015, 2016a, 2016b). The e-Delphi was conducted via Qualtrics, a secure online software program for digital data collection. This e-Delphi study consisted of three rounds. Fig. 1 outlines the complete Delphi process. The first round consisted of nine demographic and 36 open-ended questions and was guided by previous research (Walker, 2017). These questions were designed to explore the knowledge, views, and experiences of professionals in relation to breech presentation and aspects of breech care and education. The focus of this article will be on the care recommendations and education. Responses were coded and organised into statements which were derived directly from the data. The resultant statements were then prepared for Round two and circulated to the panel after they were categorised. Due to the amount of data generated from round one, round two and three were divided into sections which required the participants to complete each section before progressing to the next round. Participants were advised that if each part was not completed, they could not progress to the next section or round.

Participants

Recruitment lasted for 10 months between November 2018 and August 2019. Participants were required to be at least 18 years of age, could read and speak English and had experience or knowledge of supporting and caring for women during pregnancy, predominantly those women with a breech presenting fetus at term (Morris et al., 2021b). Being a health professional was not included in the selection criteria as the aim was to capture a wider range of experiences, for example education, advocacy workers or consumers.

The credibility of the Delphi method rests significantly on the perceived expertise of the participating panellists, therefore participant sampling poses a methodological concern (Keeney et al., 2011). This study aimed to capture a panel whose members had varying experiences of caring for women with a breech presenting fetus, as experience is contextual. Participants all practiced in different settings (i.e. home birth or birth centre or in a hospital setting), and therefore had different perspectives to offer. Ethically approved social media posts outlining the

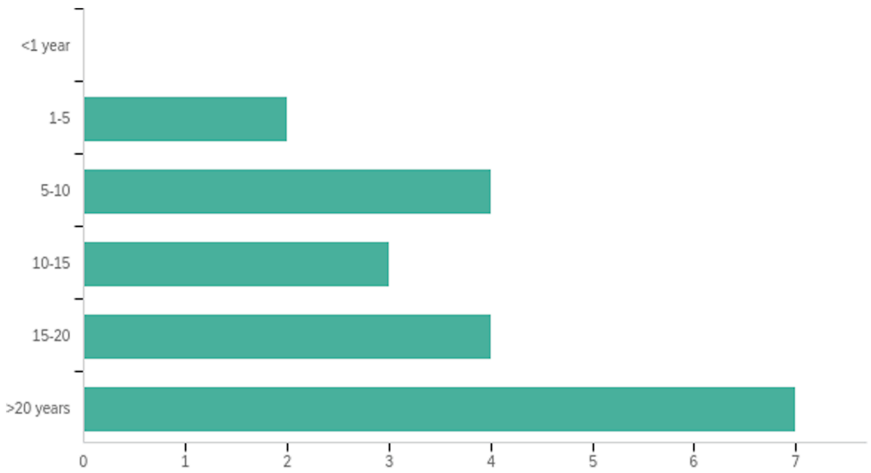

Fig. 2. Panel Years of Experience.

Table 2
Panel range of experience.

	Breech Caesarean sections attended or performed		Vaginal breech births	
	Elective*	Non-elective*	Lithotomy	Upright
All	312	176	301	718
Range	0–200	0–50	0–150	0–558
Mean	28.36	9.77	15.05	37.78
Median	1	3.5	4.5	8
Midwives				
Range	0–30	0–30	0–30	0–558
Mean	8.86	6.67	5.4	43.44
Median	1	2	4	6.5
Obstetricians				
Range	50–200	0–50	10–150	0–20
Mean	125	18.75	55	10.75
Median	125	12.5	30	11.5

Please note: Numbers are approximations as some participants did not recall exact number.
* (denotes missing data. Figures based on available data).

aim of the study and the contact details of the lead researcher were circulated on Twitter™ and Facebook™. This generated interest from potential participants. The posts encouraged people to make contact if they were interested in participating. A combination of snowball and convenience sampling was utilised for this study (Morris et al., 2021b).

Participants were asked to pass the study information on to any of their colleagues who might be interested in participating (snowball recruitment). Recent breech literature was also reviewed as a means of identifying potential participants. A total of 54 possible panellists were identified through the abovementioned strategies and individualised links to the first-round questions were emailed to them along with a detailed explanation of the study's aims and expectations. A total of 25 invitees responded giving a response rate of 46.3%. Five responses were excluded as they were returned blank or only the demographic section was completed. Ultimately the panel consisted of 20 professionals (outlined in Table 1): fifteen midwives, four obstetricians and one academic with a background in childbearing research.

The years of experience and breech birth experience of participants may be viewed in Fig. 2 and Table 2 respectively.

Consensus

This study had a predetermined level of consensus of ≥70% as this level is commonly used and was seen to be a relative midpoint for previously reported levels, which range from 50% to 100% (Morris et al., 2021b; Walker et al., 2016a, 2016b).

Ethical considerations

Permission to undertake this study was granted by the University Human Research Ethics Committee (project number 19,566). All participants in this study were provided with an information sheet outlining the scope of the respective studies, the contact details of the research team, and the phone number for a helpline if they experienced any emotional discomfort when recalling their experiences. Prior to each round, every participant was required to indicate their consent by selecting "I consent to participating in this study". Participants were advised that they were able to withdraw at any time prior to the submission of their responses.

Data collection and analysis

Rounds were distributed digitally, and responses recorded via Qualtrics™. Prior to the distribution of each round, statements were reviewed independently by members of the research team, collated into groups or themes, and amalgamated where possible. Comments made by the panel were considered and distributed in each subsequent round.

Findings

The findings revealed that while most of the recommendations for antenatal and intrapartum care aligned with leading clinical guidelines, there were significant variations in opinions related to type of breech presentation appropriate for a vaginal birth. Based on consensus statements regarding practitioner skills and the recommended care for women with a breech presentation, a clinical skills framework and pathway of care emerged. These are described in detail below.

Breech care pathway and care recommendations

Based on the recommendations of the panel, a simplified breech care pathway was compiled (Fig. 4) and circulated for approval. Panellists were asked to indicate if they agreed or disagreed with elements outlined for each aspect of antenatal care by clicking once (for agree) or twice (for suggesting changes). Panellists were advised that the pathway was focussing on care specific to women with a breech presenting fetus, therefore aspects of care considered a part of routine antenatal assessment (i.e. fetal heart rate, maternal vital signs, etc.) were not included. It was presumed that these would be completed at every appointment. Consensus was met on aspects of 'Diagnosis of Breech' and 'Follow Up' care (77.78% for each point of care). For 'Birth', 55.56% of panellists agreed while 33.33% recommended changes. The suggested changes included:

Table 3
Breech birth counselling.

Statements	%	Mean	Std Deviation
A woman's decision regarding the birth mode of her baby should not be based on fear.	88.89	1.67	0.94
Breech presentation is a variation of "normal".	100	1.10	0.30
A discussion about the short and long term risks (i.e. Haemorrhage, infection, prolonged hospital stay, i.e. Exempt from home birth in future, possibility of repeat cesarean, implications for future pregnancies) and benefits of a cesarean section for the woman.	90	1.20	0.60
A discussion of what is involved in the recovery period for a cesarean section (i.e. Limitation on activities).	90	1.20	0.60
Statistics (i.e. 40% of women who plan a vaginal breech birth need a cesarean).	90	1.70	1.19
A discussion about the risks and benefits of a cesarean section for the fetus (i.e. Risk of allergies/asthma, reduction in risk of morbidity/mortality if elective).	100	1.10	0.30
A discussion about the long/short term risks and benefits of a vaginal breech birth for woman and fetus.	100	1.10	0.30
There is minimal long term risk in a vaginal breech birth for the fetus.	80	1.60	0.80
How complications are resolved in a vaginal breech birth.	100	1.20	0.40
That there is no increased risk of cerebral palsy by having a vaginal breech birth.	90	1.40	0.66
That there is a slight risk of mortality for the fetus.	100	1.40	0.49
That there is increased perinatal risk with inexperienced/scared care provider, perhaps referral is needed.	80	1.90	0.94
A discussion about the need for maternal cooperation if intervention is required.	90	1.50	0.67
Description of a caesarean section – major abdominal surgery.	90	1.50	0.92
A discussion about the first breastfeed if a caesarean section occurs (i.e. Can happen in recovery).	90	1.90	1.14
Skin to skin in theatre.	90	1.80	1.17
VBAC information.	80	1.70	1.00
A discussion about the outcomes for a caesarean section versus vaginal breech birth (literature based).	100	1.30	0.46
An assessment of individual risk factors including how research applies to the woman's situation.	100	1.20	0.40
A discussion of breech birth literature (i.e. Current studies not just the term breech trial, evidence for caesarean section and vaginal birth).	100	1.20	0.40
A discussion of the facilities selection criteria and its rationale.	90	1.40	0.66
The woman's legal and ethical rights (i.e. Informed consent, informed refusal, bodily autonomy).	90	1.60	1.20
The provision of social support – contact list of families who have experienced a breech birth, support groups, social media groups so they don't feel alone.	90	1.50	0.67
The fact that there is no difference in outcomes if the woman is cared for by an experienced clinician trained in physiological breech birth.	80	1.90	0.70
Clear written information.	80	1.40	0.80
A discussion of guidelines and protocols (ACOG, Greentop, organisational).	90	1.50	0.67
A discussion regarding the culture surrounding breech birth (i.e. Why some are afraid of it).	80	1.70	0.78
A multidisciplinary discussion/consultation.	70	1.90	1.04
The clinician's own statistics (breech birth outcomes).	80	1.90	0.70
Maternal positions for birth.	100	1.20	0.40
The fact that upright position often requires less intervention.	90	1.40	0.66
Asking the woman what she already knows and proceeding from there.	100	1.20	0.40
The tendency for lower APGARS.	90	1.30	0.64
What to expect for a vaginal breech birth (encourage video material, literature, etc.).	90	1.50	0.67
Information on External Cephalic Version (i.e. Risks and benefits, the possibility of intrapartum ECV, offered at 36 weeks).	100	1.30	0.46
That there is a higher risk of emergency caesarean section than for cephalic baby.	100	1.40	0.49
A discussion of the philosophy of care provider and setting.	90	1.60	0.66
A discussion of the factors that promote physiology.	100	1.30	0.46
That she can change her mind if she wishes.	100	1.10	0.30
There is a high risk of serious short term complications for the fetus after a vaginal breech birth.	100#	4.00	0.00
Breech birth counselling is important because:			
It facilitates informed decision making (can't be fully informed without all information).	100	1.10	0.30
It is a woman's right to choose what's right for her.	100	1.20	0.40
The woman needs to feel safe.	100	1.10	0.30
Knowledge builds trust and confidence.	100	1.00	0.00
It allows maternal preparation for birth (mental).	100	1.10	0.30
It takes into consideration the woman's medical future and next pregnancy.	100	1.10	0.30
The evidence supporting vaginal breech birth is good.	90	1.40	0.92
It allows women to understand their options.	100	1.10	0.30
It allows women to understand the risks involved in their choice.	90	1.30	0.90
It offers the opportunity for her instincts and choices to be affirmed while being sure she is aware of the risks.	100	1.20	0.40
There is an illusion of safety around caesarean sections.	100	1.30	0.46
It allows the woman to consider future planning.	100	1.20	0.40
If done well it can reduce maternal risk.	70	2.10	1.37
There is a tendency to focus on the woman's current pregnancy, not the woman's goals for her family.	90	1.50	0.67
Having the information allows the woman to remain in control for her pregnancy, labour and birth experience.	90	1.70	0.64
Inaccurate advice results in uniformed consent.	90	1.30	0.64
Women can be traumatised when not provided with appropriate information/support when breech presentation is diagnosed – especially if diagnosed in labour.	90	1.30	0.64
External Cephalic Version should be discussed and encouraged because:			
If it is successful a cephalic birth is safer.	70	2.30	1.19
It has a low rate of complications.	70	2.10	1.30
It might offer only chance for a vaginal birth in light of lack of experienced practitioners.	100	1.60	0.49
It allows the woman to return to her birth place of choice (i.e. Birth centre) if successful.	100	1.50	0.50
It is a smaller intervention than a caesarean section.	90	1.50	0.67
There is a high risk of caesarean section in most settings due to breech culture.	100	1.20	0.40
The woman has the opportunity to become "low risk".	90	1.80	0.87
It decreases the need for caesarean section (therefore there is a higher chance of vaginal birth).	83.33	1.83	1.07
ECV is best performed at a weekly session with access to ultrasound, cardiotocography and theatre facilities.	83.33	2.00	1.41
Women should not be encouraged to undergo an External Cephalic Version because:			

(*continued on next page*)

Table 3 (*continued*)

Statements	%	Mean	Std Deviation
All options should be presented and discussed – decision should be made by the woman.	90	1.60	0.92
Babies can turn at any time - even in advanced labour.	80	2.00	0.89
The risk of cord entanglement.	83.33#	4.00	1.00
Alternative cephalic version techniques should be discussed with women because:			
It is important that women know all their options.	80	1.80	0.75
Alternative cephalic version techniques that should be discussed with women include:			
Moxibustion.	70	2.00	1.00
Maternal positioning/fetal navigation techniques (Spinning Babies, etc.).	80	1.70	1.00
Acupuncture/acupressure.	70	1.90	0.83

# denotes participant responses ranged from somewhat to strongly disagree.

- the inclusion of anaesthetic and paediatric support,
- admission from 6 cm dilated to reflect updated recommendations related to active labour,
- "Time out" to be done prior to second stage (suggested to be done on admission),
- Continuous electronic fetal monitoring was considered not necessary by some,
- The wishes of the woman should be considered for all aspects of care and
- weekly check-ups were not always necessary.

One panellist believed that care provided from 34 weeks gestation was not realistic. Consensus was only reached on the "Time out" occurring prior to second stage – which was a part of the original pathway, with one panellist suggesting that it take place on the woman's admission. A "Time out" in this context was proposed in order to determine the roll of each clinician involved in the care of the woman during her labour and birth (i.e. primary accoucher, time keeper, documenter, etc).

The panel unanimously (100%) agreed that the ideal model of care for women experiencing a breech presenting fetus at term was midwifery-led continuity of care with supportive obstetric consultant input. Other factors related to models of care included an on-call system for labour and incorporating women's carer of choice (i.e. private midwife or obstetrician, case-load midwife, etc.). It was agreed that clinicians should encourage women to explore breech material such as literature, audio-visual media, and dedicated breech social media support groups.

Breech presentation counselling

Breech presentation counselling was viewed as an essential aspect of breech care. It was agreed by the panellists that women's birth mode decisions should not be based on fear. It was also agreed that women should experience a multidisciplinary consultation and be asked about their existing knowledge of breech presentation and birth. This was so the counselling could be tailored to the woman's specific needs. Panellists believed that breech counselling should involve a balanced discussion of the:

- Short and long term benefits and risks of VBB and C/S for both the woman and the fetus,
- Cephalic version techniques and breech birth statistics (success of VBB, perinatal morbidity and mortality, etc.),
- the importance of a skilled/experienced care provider,
- the literature (including the TBT and more recent studies) and current clinical practice guidelines,
- the woman's legal and ethical rights,

Table 4
Characteristics and elements for VBB.

Statements	%	Mean	Std Deviation
A breech presentation is appropriate for a vaginal birth:			
When the fetus is close to term (i.e. 34–36 weeks gestation).	100	1.67	0.47
In the presence of intact fetus (good heart rate, muscle tone).	80	1.70	0.78
In any position as there is minimal evidence to support the exclusion of a footling breech.	70	2.20	1.33
When the fetus is in a vertical position where the hips are flexed and the breech is in the pelvis regardless of the position of the lower extremities.	80	2.00	0.89
When the fetus is in a frank (extended) breech position.	80	1.60	1.02
When the fetus is in a complete (flexed) breech position.	80	1.60	1.02
When the fetus is in an incomplete breech position.	100	1.33	0.47
When the fetus has flexed hips.	83.33	1.83	1.07
When the fetus is estimated to be between 2500 g – 3800 g.	70	2.00	1.00
When the fetus is estimated to be between 2500 g – 4000 g.	70	1.80	0.87
When the mother is motivated.	100	1.10	0.30
When the fetus has no major abnormalities that would contraindicate the attempt.	90	1.50	0.67
In the presence of a good labour pattern.	80	1.80	0.98
Only when the fetus is in a frank or complete position.	83.33#	4.00	1.00
For a vaginal breech birth women ideally, need:			
To be well informed.	100	1.10	0.30
Well informed support people.	100	1.20	0.40
To have a skilled and experienced practitioner at birth.	100	1.10	0.30
To be able to accept uncertainty.	80	1.40	0.80
To be able to accept potential risks.	80	1.50	0.81
To be in an upright position.	70	1.90	0.83
To have no previous uterine surgery.	#83.33	4.00	1.00
To have no epidural or narcotics during labour/ birth.	#83.34	4.17	1.46
The position a woman should adopt for a breech birth is:			
Upright (all fours, kneeling, standing, squat).	70	1.70	0.90
Whatever position she favours.	100	1.20	0.40
The ideal model of care for women with a breech presentation:			
Is midwifery-led continuity of care with supportive obstetric consultant input.	100	1.11	0.31
Involves an on-call clinician system for labour.	77.78	1.78	1.03
Should be the woman's carer of choice (i.e. Private midwife or obstetrician, case-load midwife, etc.).	83.33	1.33	0.75
Encourages women to explore breech material (i.e. Breech Birth Woman Wise by Maggie Banks & the DVD Breech in the System, evidence-based trials to read if appropriate & to organisational guidelines on breech and ECV, social media support groups like the Coalition for Breech birth, etc.)	83.33	1.67	0.75
When a dedicated breech service is new, it is advisable to identify candidates with births that are most likely to be straight forward (multiparous women, healthy mum and baby, fetal weight approx. 3 kg), in order for the team/organisation to build confidence as complications in the early days can shake everyone's confidence.	88.88	2.44	1.50
The ideal setting/service for a vaginal breech birth:			
Should have access to an operating theatre within 30 min.	77.77	2.22	1.31
Is supportive of women's choices.	100	1.11	0.31

(*continued on next page*)

Table 4 (*continued*)

Statements	%	Mean	Std Deviation
Supportive of vaginal breech birth.	100	1.11	0.31
Should incorporate the principles of "hygge" (i.e. Private, dim lighting, warm, dry, clean, homey/cozy, comfortable, quiet, access to bathroom and food preparation area).	88.89	1.33	0.67
Provides an on-call system staffed by skilled breech birth attendants.	88.89	1.44	0.68
Has skilled practitioners.	100	1.11	0.31
Has supportive medical staff.	88.89	1.22	0.63
Has neonatal resuscitation equipment (positioned in a non-prominent area within the room).	88.89	1.33	0.67
Offers unbiased counselling.	100	1.00	0.00
Is dependent on clinician experience.	88.89	1.67	0.94
Provides midwifery-led model of care.	88.89	1.44	0.68
Provides clear communication when needed.	100	1.00	0.00
Is in the operating theatre, just in case.	#83.34	4.50	0.76
The ideal model of care for women with a breech presentation:			
Is midwifery-led continuity of care with supportive obstetric consultant input.	100	1.11	0.31
Should be the woman's carer of choice (i.e. Private midwife or obstetrician, case load midwife, etc.).	77.77	1.89	0.99

# denotes participant responses ranged from somewhat to strongly disagree.

- Clear written information,
- an assessment of individual risk factors,
- the provision of social supports (i.e. contacts for support/social media groups, families who have had a previous breech birth if they are willing).

Please see Table 3 for full statements.

Cephalic version

Panellists were asked to provide details related to cephalic version techniques they might recommend to women in their care and a rationale for the recommendation (Table 3). Techniques which met consensus for discussion with women during the antenatal period included maternal positioning and fetal navigation techniques such as Spinning Babies, External Cephalic Version (ECV), moxibustion and acupressure or acupuncture. While consensus was not met on the following techniques, they were still offered as potential options that women could attempt to promote a cephalic presentation: rebozo, chiropractic, hypnosis, and osteopathy.

Rationales provided for the recommendation of an ECV included it being less invasive than a C/S and that it might provide women with their only opportunity for a vaginal birth (if successful). Being able to continue in their planned birthplace with their original primary carer was also provided as rationale.

For alternative methods of cephalic version, the only rationale for recommendation that met consensus was that it was important for women to be aware of all available options.

Vaginal breech birth selection criteria

A full outline of fetal and maternal characteristics can be viewed in Table 4.

Fetal characteristics for a vaginal birth

Consensus was met on the following selection criteria:

- gestation close to term (≥34 weeks gestation) (100%)
- when the fetus is in a vertical position where the hips are flexed, and the breech is in the pelvis regardless of the position of the lower extremities (80%)
- fetal weight estimated between 2500 g and 4000 g (70%)
- No fetal abnormalities that would contraindicate a vaginal birth (90%)
- An intact fetus (normal heart rate, good tone) (80%)
- A good labour pattern (80%)

Footling breech

As there was no standard definition of a footling breech at the time this study was conducted, participants were asked how they defined a footling breech presentation. A total of three definitions were derived from first round data and circulated to the panel in rounds two and three. The definitions offered were as follows.

A footling breech is when the fetal:

1. foot/feet are below the buttocks, buttocks are engaged in the pelvis or;
2. fetal foot/feet are below the buttocks, buttocks not engaged in pelvis or;
3. hips are extended and the feet are in the vagina.

Only two of the above definitions met consensus. Definition one received a consensus level of 85.51% where participants disagreed that this statement defined a footling breech, while 71.43% of participants agreed with definition three. Definition two did not reach consensus.

Seventy percent of participants stated that women with a footling breech should not be discouraged from attempting a vaginal birth as there is minimal evidence to support its exclusion. One participant stated that as a true footling is unlikely in a term fetus (hips and legs fully extended) while another commented that:

"Certainly, the rarity of those events and the rarity of them delivering vaginally gives us much less data to examine. There is old data from Germany that suggests the while footling breeches (single or double) are more likely to have cord prolapses, they don't seem to have worse outcomes" (OB4).

It was believed that women experiencing an 'abnormal breech presentation' should be counselled on the risks and benefits of each birth mode as they pertained to their specific circumstances. It was agreed the final decision on birth mode should be the woman's.

Maternal characteristics for women desiring a vaginal breech birth

Panelists outlined characteristics that were desirable for women wishing to attempt a VBB. They believe a woman and her support people need to be well informed. It was also agreed that women need a skilled and experienced clinician practitioner at the birth and be able to accept a degree of uncertainty and the potential risks with a VBB. Interestingly, panelists disagreed that previous uterine surgery (i.e. C/S) should preclude a woman from attempting a vaginal birth. They also disagreed that epidural or narcotic analgesia should be discouraged for pain relief in labour and birth, as this should also be the woman's choice.

Panelists collectively favoured upright birthing positions, however they unanimously agreed that the woman's choice of birth position should be respected.

Labour management algorithm

Panellists were asked their views on the use or implementation of a breech birth algorithm. A breech birth algorithm (Reitter et al., 2020) (with permission of the original author Dr Shawn Walker) was circulated to the panel for review and comment. The algorithm outlines the ideal time of the birth of the breech remaining on the perineum to the birth of the fetal head, the mechanisms of an uncomplicated breech birth and manoeuvres to restore the mechanism if a deviation from the 'norm' is observed. Participants were asked to assess the algorithm and provide any feedback or suggestions related to its composition. The algorithm was divided into four sections: Stages of birth, Timing, Adjustments, and Interventions. Most panellists viewed a VBB algorithm positively. However, one panellist expressed concerns that the use of an algorithm had the potential to de-individualise care.

Table 5
Clinical skills.

Clinician experience compared to selection criteria for vaginal breech birth is:			
More important as good skills can aid a less than optimal candidate to achieve a vaginal breech birth.	100	1.00	0.00
Equally as important because selection criteria should include the experience of the clinician.	93.33	1.73	0.77
More important as the criteria can be wrong (i.e. estimated fetal weight can be over/underestimated).	73.34	2.20	1.11
Equally important because experience is a valuable asset and selection criteria provides governance to evaluate a breech presentation.	73.34	2.20	1.05
More important because undiagnosed breeches will always occur.	86.66	1.67	0.87
More important because a practitioner's ability to respond to variations of normal outweighs selection criteria.	100	1.17	0.37
More important because a clinician who trusts the process and is not fearful is needed.	86.67	1.67	0.70
More important because the most important thing is for a practitioner to be able to resolve head stuck in the pelvic inlet.	73.34	2.07	0.85
More important because practitioners need to cope with all eventualities, birth is unpredictable.	93.33	1.67	0.60
More important because research indicates there is a direct correlation between the skill/experience of the practitioner and outcomes.	80	1.67	0.94
Ranking from most to least:			
Least concerning factor regarding breech birth is unforeseen events.	88.89	13.11	2.51
Most important attribute/skill for a breech birth practitioner to have is knowledge of physiological labour/birth and how to support it.	80	1.27	0.57
Intrapartum sonography skills are not required for the safe support of vaginal breech birth but may be helpful.	70	2.60	1.28
Breech birth competency should be evidenced through:			
An audit trail.	83.33	2.17	0.37
A certificate.	100	2.00	0.00
Peer evaluation of the candidate's management of births.	100	1.80	0.40
Self-reflection and evaluation.	100	1.20	0.40
A reflection diary (i.e. describing what happened at births attended).	90	1.90	0.54
A log book/competency record (real births/ simulations).	80	1.80	0.75
Maintaining competence in breech birth should be evidenced through:			
Documentation (i.e. log book, audit).	100	1.50	0.50
Outcome reviews.	100	1.70	0.46
Breech training for midwives and obstetricians should <u>not</u> be the same because:			
They typically practice differently – differing settings with different clients therefore standards may differ somewhat.	83.33#	4.00	1.00
The updating of breech skills should:			
Involve monthly practice and review of cases.	100	1.17	0.37
Occur as often as possible.	80	1.90	1.22
Be based on several factors.	90	1.60	0.66
Occur every 2 years.	83.33#	4.33	0.75
Occur every 5 years.	83.34#	4.50	0.76
Breech birth should not be taught as an emergency.	70	2.30	1.62
Support from experienced colleagues is important to the development of breech birth skills. Support can be offered in the form of verbal guidance and providing reassurance when attending a birth.	90	1.30	0.64
Teaching breech birth skills to others is/can be rewarding and broaden perceptions of breech presentation/birth.	100	1.20	0.40
The teaching of breech birth (and manoeuvres to alleviate complications) could be improved upon at the university level.	100	1.40	0.49
Breech birth competency can be achieved through:			
Drills on simulators (hands on experience).	90	1.50	0.92
Observing breech birth.	80	1.80	1.17
Attending breech births (hands on under supervision).	100	1.00	0.00
Working with experienced breech practitioners.	90	1.20	0.60
Watching breech birth videos.	90	1.80	0.87
Engaging in research and consuming literature.	90	1.80	0.60
Education on breech physiology.	100	1.30	0.46
Obtaining knowledge of cardinal movements/ mechanism.	100	1.40	0.49
On-line learning.	80	2.00	0.89
Workshops such as the BABE (Becoming A Breech Expert) course.	70	2.00	0.77
Following an algorithm as published on breechbirth.org.uk.	70	2.00	1.18
Teaching breech birth.	100	1.50	0.50
Establishing centres of excellence where women are referred to (i.e. Dedicated breech services) due to relative scarcity of vaginal breech birth.	90	1.60	0.66
Breech birth training for midwives and obstetricians should be the same because:			
Both need to recognise if there is an issue and be able to restore the mechanism.	100	1.10	0.30
Job title is irrelevant.	90	1.60	0.92
An unexpected breech can occur in any setting.	100	1.10	0.30
Both are equally responsible for giving evidence-based care.	100	1.10	0.30
Both act as lead carer.	90	1.30	0.64
Midwives are specialists in normal birth, many breeches are a variation of normal.	90	1.20	0.60
A midwife might be the only available practitioner.	100	1.10	0.30
It provides greater choice and flexibility for women when choosing lead carer.	80	1.50	0.81
The required skills and manoeuvres are the same (obstetricians receive additional training for forceps and C/S).	100	1.10	0.30
Both need to know in order to support women's choice (support of bodily autonomy/informed decision making).	100	1.10	0.30
Breech birth training for midwives and obstetricians should NOT be the same because:			
Obstetricians need to know how to use forceps/perform a cesarean section.	70	2.10	1.37
Doctors need more education with supporting physiological labour and birth.	70	2.10	1.37
A reason for midwives up-skilling in ECV and 3rd trimester USS is:			
That technology is a part of daily life in births.	83.34	1.50	0.76
ECV is not difficult and skills should be developed, if necessary, by visiting other hospitals. ECV can be performed by suitably trained midwives; experience with ultrasound is essential. Vigilance for breech presentation after 34 weeks is important. A proper understanding of the risks is essential for the obstetrician and midwife to allow accurate counselling. Local audit should be used to aid this.	80	1.60	0.80
If they desire these skills they should be available.	90	1.50	0.67
They are desirable skills to have.	80	1.70	0.78
It may improve the experience for women.	80	1.60	0.80
It allows the woman to continue care with her known provider.	70	1.70	0.90
Breech presentation is a time sensitive situation – if the woman needs to attend a different facility to undergo these procedures, there is a possibility that she may labour before she can make the appointment.	80	1.50	0.81
ECV is a skill developed over time.	70	2.00	1.00
Women in remote areas can then be offered these services.	80	1.60	0.80
It promotes a team/collaborative approach.	80	1.60	0.80
It may increase uptake of vaginal breech birth.	80	1.80	0.75
It may reduce incidence of cesarean section.	80	1.80	0.75
Midwives skilled in third trimester ultrasound:			
Has the potential to relieve pressure on their colleagues.	90	1.70	0.64
Allow them to confirm presentation if there is doubt immediately.	90	1.30	0.64
Would improve the service for women.	70	1.70	0.90
Would allow greater autonomy due to an increased demand for midwifery-led units.	80	1.60	0.80
Will assist in keeping breech normal.	70	2.20	1.16
Expertise is defined by its ongoing function, the generation of comparatively good outcomes, and	92.86	1.29	0.59

(*continued on next page*)

Table 5 (*continued*)

confidence and competence among colleagues. Although clinical experience is important, expertise is developed and expressed in social clinical roles, which expand as experience grows: clinician, mentor, specialist, and expert. To develop expertise within a service, clinicians who have an interest in breech birth should be supported to perform these roles within specialist teams.			
A breech expert:			
Attends breech births.	100	1.17	0.37
Is someone who has attended at least 20 successful breech births.	100	1.83	0.37
Teaches and supports others to develop breech birth skills.	100	1.43	0.49
Engages in on-going education including attending workshops/simulation and reviewing breech literature.	100	1.29	0.45
Understands the mechanism of a breech birth and is proficient in restoring it/managing complications).	92.85	1.21	0.56
Can competently and confidently assist the woman to birth vaginally.	100	1.14	0.35
Able to offer breech birth unbiased counselling to enable informed decision making regarding mode of birth.	100	1.07	0.26
Is hands off during the birth unless required.	92.86	1.43	0.62
Is aware of their own limits.	100	1.14	0.35
In-depth understanding of breech birth physiology.	92.86	1.29	0.59
Attended births in varied positions (all fours/upright, lithotomy).	78.57	1.86	0.91
Is dependent – experience in resolving complications is more relevant to expertise than birth numbers.	78.57	1.86	1.06
Is able to display a working knowledge of breech birth and breech birth literature.	82.72	1.50	0.73
A better term than breech expert is confident, competent practitioner.	85.71	2.07	1.03

# denotes participant responses ranged from somewhat to strongly disagree.

They stated:

I do not like algorithms and feel that they become more important in training that learning basics of body mechanics. Every birth practitioner should be prepared to jump in any situation which deviates from average/normal. Thus, it is much more important to teach the mechanics. (MW3)

Other participants felt that an algorithm is more appropriate as a teaching tool for practitioners who are learning physiological breech birth skills. Other panellists commented:

I both agree and disagree. I think an algorithm like this is great for those just starting to attend vaginal breeches who need a nicely defined series of steps to follow. On the other hand, I would hate for the algorithm to become so set in stone that practitioners feel they cannot deviate from the algorithm for fear of reprisals. Sometimes there are unusual situations that don't fit into any algorithm! (AC1)

An algorithm is not for experienced clinicians…. It is for providing safety parameters for clinicians who are learning breech skills and are not yet able to individualise care safely due to a lack of experience. Experienced clinicians process clinical information differently. Inexperienced clinicians miss important signs because they have not yet learned what to focus on. (MW15)

Clinician skills framework

Panellists were asked to provide their opinions regarding the development, maintenance and recording of breech birth competency. Based on consensus statements (see Table 5), the following framework for obtaining, maintaining, and documenting breech birth skills was developed – see Fig. 5. Mechanism restoring manoeuvres thought to be pertinent in the in a breech practitioner's skillset may be viewed in Table 6.

Panellists were also asked to give their opinion on the training of

Table 6
Breech mechanisms and manoeuvres.

Statements	%	Mean	Std Deviation
Breech birth has identifiable mechanisms which can be observed and used as a means to identify 'normal' progress. Knowledge of what is 'normal' allows practitioners to identify when an intervention is required.	100	1.10	0.30
The cardinal movements of a vaginal breech birth are:			
The fetus presents sacrum transverse.	77.78	1.56	0.83
It rotates to sacrum anterior during descent (tum to bum).	77.78	1.56	0.83
The lower extremities born simultaneously or relatively close together.	77.78	1.56	0.83
The torso descends.	77.78	1.56	0.83
The fetus assists birth of arms with "tummy crunches" – both arms are born within a few seconds of each other.	88.89	1.33	0.67
The anterior arm born (under the pubic bone) first with slight rotation to occipital oblique.	77.77	1.89	0.99
The posterior arm is born (underneath the sacrum) with slight rotation back to occipital anterior (tum to bum).	77.77	1.78	0.79
The fetal head engages in the pelvis, its chin should be visible underneath the perineum.	83.34	1.67	1.11
In lithotomy after the birth of the arms the nape of the neck should be visible.	77.78	1.67	0.82
Fetus born spontaneously with fetal movements (tummy tuck and arm lifting).	77.78	1.56	0.83
To what extent do you agree or disagree with clinicians needing to be able to perform the following in an upright breech birth:			
Frank's Nudge (Holding the baby's back press thumbs into the subclavicular hollow under the collarbone inside the shoulder and above the rib cage. Pressing the muscle and moving baby towards the woman's pubic bone causes a reflex to flex head ensuring enough room under mother so baby can hang).	70	1.80	0.87
Prayer hands to elevate and rotate the baby - with your fingertips against the bony prominence of the shoulder girdle, palms flat to avoid fetal organ damage. Elevate slightly to dis-impact, and rotate the fetal torso so that the shoulders are in the transverse diameter.	80	1.50	0.81
Advising woman of movements/position changes (to aid flexion of the head or increase room in the pelvis).	90	1.30	0.64
Shoulder press/Louwen's with rock and roll (holding the baby with fingers on the back of the ribcage and the thumbs pointing upwards on below the clavicles in line with the armpits, flex shoulders and push back towards the mothers legs, release when resistance is felt and do again. Repeat until the head is born).	80	1.50	0.81
Sweeping down compound arm/s.	80	1.40	0.80
Manoeuvres in lithotomy:			
Mauriceau-Smellie-Veit – baby straddles forearm and hand, first and second fingers of that hand placed on baby's cheek bones to flex the head, other hand placed over baby's shoulders, two fingers placed on occiput to aid flexion, suprapubic pressure applied by assistant as primary clinician raises the baby until face unobstructed by perineum.	100	1.60	0.49
Loveset's – hold baby by pelvis, rotate baby to free arms/shoulders.	100	1.50	0.50
"Vannah White" (sweeping arms across the body).	70	2.00	0.77
Pinard's – freeing the legs by administering pressure to the popliteal space.	83.33	1.67	0.75
Suprapubic pressure.	83.34	1.83	1.46
Piper forceps (obstetricians).	100	1.33	0.47

# denotes participant responses ranged from somewhat to strongly disagree.

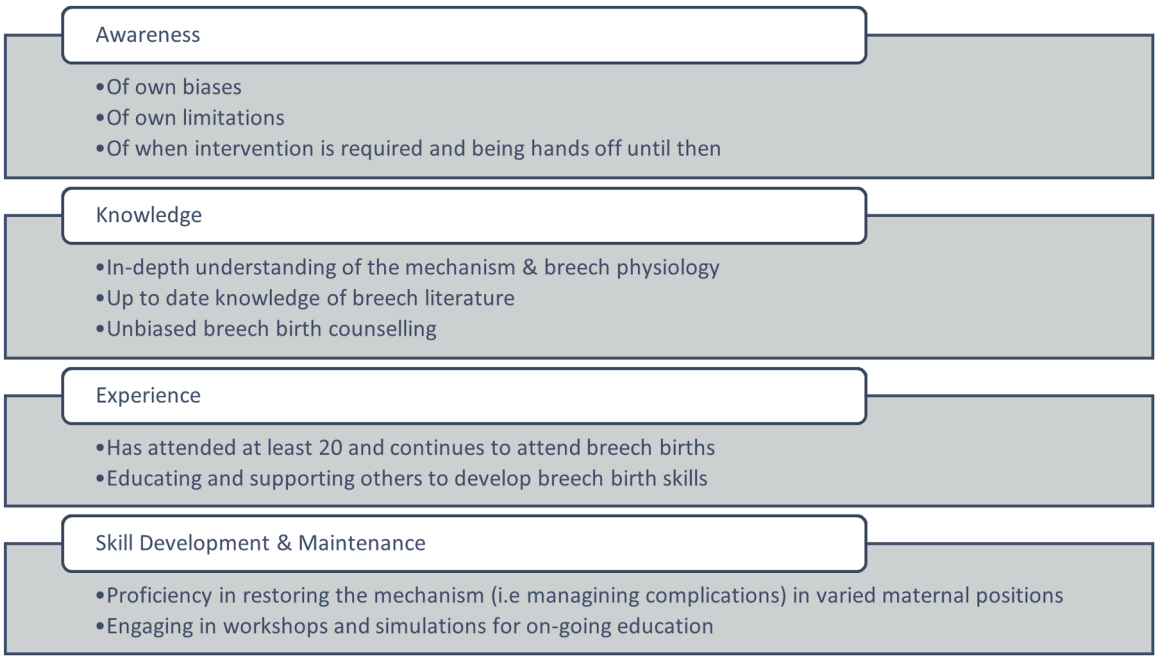

Fig. 3. Elements of Experience.

midwives and obstetricians – mainly should there be a difference between training and if so, what that difference should be. Ninety percent of participants felt that when it came to clinical skills, job title was irrelevant. Panellists declared that the training of midwives and obstetricians for breech birth should primarily be the same except for C/S and forceps for obstetricians. However, 70% of participants believed that obstetricians need further education in supporting physiological labour and birth.

Both midwives and obstetricians act as lead carers. Unexpected breeches can occur in any setting. Therefore, both professional groups need to recognise deviations and complications in breech birth and have the skills to restore the mechanism. Similar training for both groups of professionals in the skills and manoeuvres for breech birth provides greater choice and flexibility for women when choosing a lead carer. Another reason provided focused on clinicians' responsibility for the provision of evidence-based care with one participant stating:

> *If clinicians were taught to practice/support vaginal breech labour and birth according to latest evidence, there would be a greater percentage of staff both competent and confident to support women achieve a vaginal breech birth (MW8).*

The subject of midwives upskilling to gain basic third trimester ultrasound and ECV competency was also addressed. For the full details of the consensus statements please see Table 5. It was agreed that midwives should be allowed the opportunity to upskill because it would increase accessibility to these skills for women and decrease lengths of stay for antenatal procedures. For example, it would allow for the immediate diagnosis or exclusion of a breech presentation. Perceived benefits included decreasing the rate of C/S for breech, promoting a collaborative approach to breech care provision, and potentially allowing the woman to continue with her known care provider and assist in keeping breech presentation 'normal.'

Almost 93% of clinicians agreed that:

Expertise is defined by its ongoing function, the generation of comparatively good outcomes, and confidence and competence among colleagues. Although clinical experience is important, expertise is developed and expressed in social clinical roles, which expand as experience grows: clinician, mentor, specialist, and expert. To develop expertise within a service, clinicians who have an interest in breech birth should be supported to perform these roles within specialist teams.

Elements deemed pertinent to breech expertise have been displayed in Fig. 3 and included elements of Awareness, Knowledge, Experience, and Skill Development and Maintenance.

Lacking consensus

While the primary objective of a Delphi study is to meet consensus on the generated statements, a lack of consensus can also be significant (Walker et al., 2015). A total of 82 statements from all the data did not meet consensus (See Table 7). Panellists were asked to rank skills related to antenatal and intrapartum USS, clinical causes for concern along with clinician attributes from most to least important. These elements did not meet consensus either. Statements which gained and those which lacked consensus demonstrated that even in a niche area of interest such as breech presentation and birth there is division. It may also be accounted for through the declining number of respondents as the study went on, which is a common limitation of Delphi research (Keeney, et al., 2011). While the panellists did not reach consensus on these statements, the prevailing opinion was one of agreement unless otherwise indicated.

Discussion

This study was guided by previous research with permission of the original researcher (Walker, 2017). The findings of this study were consistent with and seem to corroborate the original results.

Care pathway

The proposed care pathway aligns with current clinical practice guidelines and existent breech birth pathways of care in the provision of counselling, ultrasound and ECV in the absence of contraindications (Impey et al., 2017; Kotaska and Menticoglou, 2019; Morris et al., 2021a; Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), 2016). It also shares similarities with labour selection criteria and management to include continuous fetal monitoring, if the woman is agreeable, along with the presence of a VBB skilled practitioner (Impey et al., 2017; Institute of Obstetricians and Gynaecologists (IOG), 2017; Kotaska and Menticoglou, 2019). One

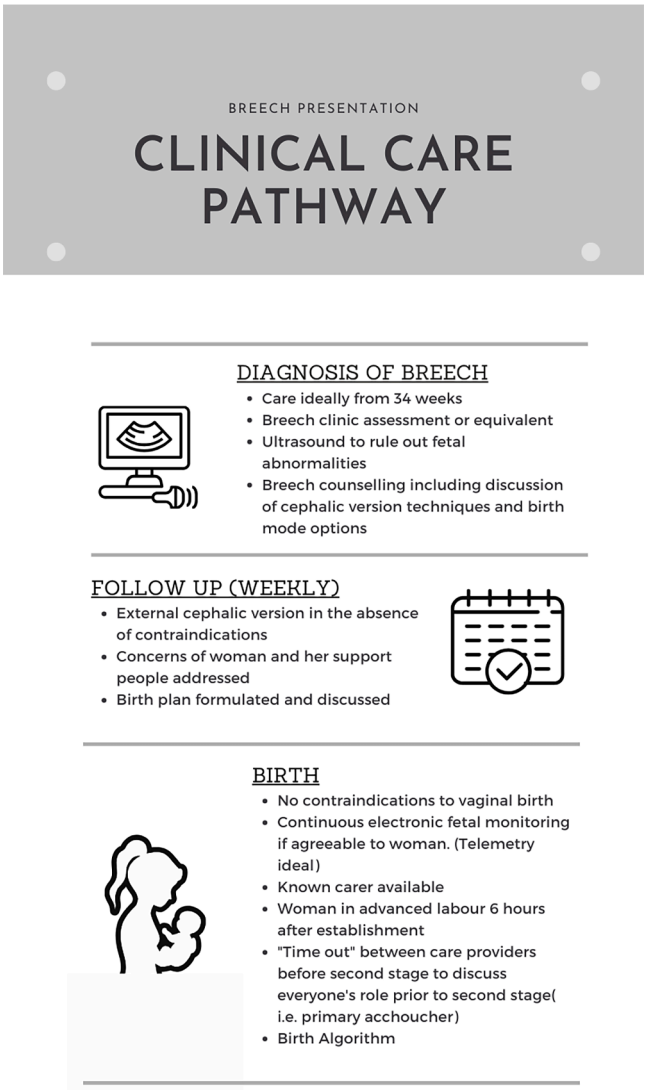

Fig. 4. Care Pathway.

panellist suggested the inclusion of anaesthetic and paediatric support however, as the presence of a paediatrician and access to anaesthetic facilities and personnel is recommended in clinical practice guidelines (King Edward Memorial Hospital (KEMH), 2018; Kotaska and Menticoglou, 2019) this was not added to the proposed pathway as it is considered routine.

Having a specialised care pathway, such as those available in Integrated Care Pathways (ICPs), can promote consumer-focussed care, reduce the incidence of unnecessary intervention, length of stay, improve communication and patient satisfaction (Morris et al., 2021b). It can also facilitate consumer education and multidisciplinary collaboration and aid in the implementation of evidence-based interventions (Curran et al., 2005). The care pathway outlined will be used to guide the development of a breech-specific ICP which could be used to support the implementation of a specialty breech service.

Footling breech

A footling breech is considered a contraindication to a vaginal birth according to leading obstetric guidelines, but a clear definition of what is considered a footling breech is not provided (Impey, et al., 2017b; Morris, et al., 2021; Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG), 2016). One study depicts a footling breech as one or both feet presenting as the lowest part (Youssef et al., 2021). Participants agreed that a footling breech presentation could be defined as the fetal hips are extended and the feet are in the vagina. But interestingly, almost 86% of participants disagreed with the definition put forward in the above-mentioned guideline, if the fetal buttocks are engaged in the maternal pelvis.

Three definitions of a footling breech were derived from Round one data and were presented to begin clarifying the term. Two of the proposed statements met consensus (either ≥70% agree or disagree) which are presented in Table 8. Participants disagreed with the definition of a footling breech presentation which currently features in one Australian hospital's clinical guideline (The Royal Women's Hospital, 2017) for the management of breech presentation. Without a clear definition of a footling breech by chief organisations such as RANZCOG, a footling breech will continue to be open to interpretation. This may lead to inter-professional discord in the clinical setting. This in turn will add to the stress of women during the decision-making period as well as unwanted and potentially unnecessary C/Ss.

Podex Metu – in fear of the breech

Clinician fear and panic in relation to VBB was highlighted as a concern that all participants shared due to its potential to result in transference to the women and their support network. This premise is echoed by Michel Odent (2013) who believes women should be advised of the risks of attempting a vaginal birth around fearful clinicians.

One participant commented:

> *…I have been involved in the transfer of a woman from a low risk setting to a tertiary hospital when a breech presentation was identified at* 8 cm. *The feeling amongst the staff of the admitting unit was largely one of panic, with the registrar desperate to do an USS to confirm presentation – even though buttocks were visible on parting the woman's labia! The woman was then instructed to stop pushing until the consultant arrived, which seemed ridiculous to me as again the breech was advancing well. The woman also found it almost impossible to resist the urge to push which led to much shouting on the part of the hospital staff leaving the couple feeling panicked and scared (MW5).*

These situations in the clinical context are undesirable as it can inhibit all those involved from responding appropriately. In this instance the registrar's fear appeared to hinder their ability to adequately observe the clinical presentation and focus instead on an intervention that had limited use as the breech was already visible externally. Physiologically, fear can disrupt the hormonal processes of labour through the release of catecholamines (adrenaline and nor-adrenaline) and subsequent blocking of oxytocic receptors (Mongan, 2016). This could slow down or obstruct the normal progression of labour leading to a cascade of intervention that may not be necessary, had the transference not occurred.

Despite the relative rarity of VBB in most settings, breech birth skills are important. As many women want a vaginal birth and approximately 25% of breech presentations are diagnosed in labour (Salim et al., 2021), clinicians need to be confident and skilled at alleviating complications. Queenan (2004) felt that the recommendations of the TBT would make VBB a rare and risky event, stating that VBB should be viewed along with other infrequently needed clinical skills such as cardiopulmonary resuscitation (CPR). The point he made was that if CPR is needed, clinicians are almost able to perform it reflexively. Simulation-based training enables clinicians to build muscle memory and enhance their competence and confidence with the assistance of informative feedback (Papanikolaou et al., 2019) without the risk of harm to the consumer.

Teaching breech

Teaching breech birth as a non-urgent event has been proposed to help reduce clinician fear and begin altering entrenched negative viewpoints (Morris, 2018). This has already been commenced through

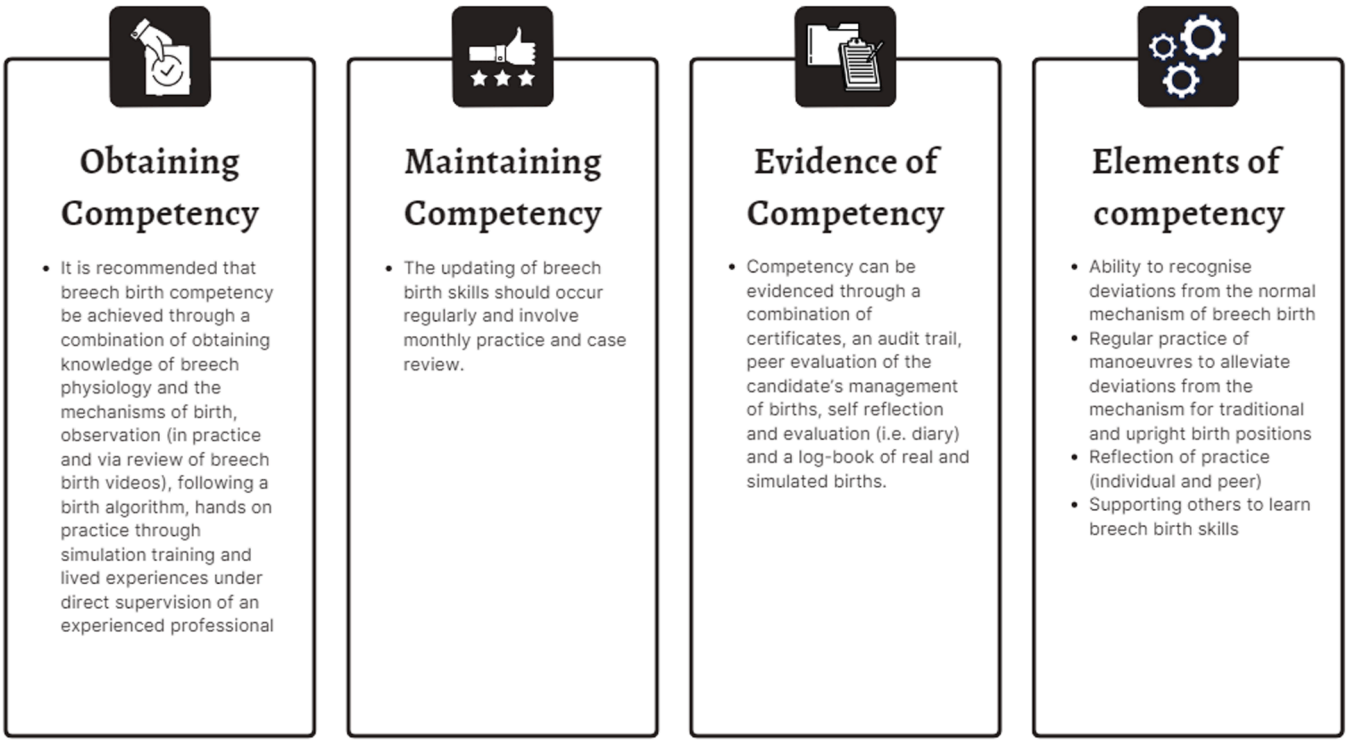

Fig. 5. Competency Framework.

physiological breech birth workshops such as those offered by AMARE who offer the BABE course in Australia, taught by Dr Shawn Walker, Emma Spillane and AMARA in the United Kingdom and Rixa Freeze, David Hayes and Kristine Lauria in the United States through Breech Without Borders.

By normalising breech presentation and birth through engaging undergraduate and junior clinicians in physiological breech study days (where non-biased, balanced counselling, and upright breech birth manoeuvres are taught) some of the misconceptions and fear that currently surround breech birth can be dissipated. Those participating would begin to develop understanding of the mechanisms of VBB and therefore be able to identify when to intervene appropriately.

As intimated by MW8, teaching physiological breech birth skills will foster competence and confidence in supporting women during a VBB, thus reducing fear of the phenomenon. The proposed framework presented in this paper offers a consensus-based pathway for individuals (and organisations) to follow to obtain, maintain and record breech birth skills.

To assist in altering the current culture of fear surrounding breech birth, how breech birth skills are taught and what language is used to describe it must be considered. Currently breech birth manoeuvres are taught as an emergency skill to undergraduate midwives, medical students and to mainstream hospital-based clinicians. Treating breech birth as an emergency lends an element of apprehension to the situation which is made evident by clinicians stating that the idea of women choosing a vaginal birth made them anxious, worried, or nervous (Rattray et al., 2020).

The birth algorithm (Reitter et al., 2020) evaluated by the panel was recommended to help teach clinicians with minimal experience of VBB. The algorithm can help identify deviations from the normal mechanism and describes how to restore it. A copy of the algorithm and clear explanations of the terminology used within are available from the Breech Birth Network Website. Within the risk averse culture that pervades contemporary maternity care, the time-frames may be preferred by clinical guideline developers when expertise in breech birth is minimal. The concerns expressed by some panel members about the algorithm's lack of individualised management have also been expressed in the literature. Daviss and Johnson (2022) expressed concerns related to the timings outlined in the algorithm and suggested incorporating other methods of identifying the need for intervention such as observation of the fetus' condition. Fetal wellbeing during a VBB can be determined by observing fetal tone, colour, heart rate and condition of the umbilical cord, all easily visible in an upright position (Daviss and Johnson, 2022; Freeze et al., 2022). If the fetus is flexing (i.e. kicking it's legs or stomach crunching), the cord is tumescent and coiled, it's heart rate has been acceptable and the birth is progressing the fetus is able to aid in its birth (Daviss and Johnson, 2022; Freeze et al., 2022). If, however the fetus is pale and limp, the cord is white and flat, this indicates potential fetal compromise (i.e. hypoxia) and identify the need for intervention. Fetal hypoxia leads to fetal extension rather than flexion and would risk further complications with the birth (i.e. head entrapment). Knowing what to do based on what is observed is imperative. Midwife 15 highlighted the importance of having a distinct set of steps with time-frames for inexperienced clinicians to follow in the event of complications (i.e. nuchal arm), however the authors agree with the assertions of Daviss and Johnson (2022) that fetal observation and knowledge of the mechanism is vital for those attending breech births. The decision to intervene should be multi-factorial. Breech Without Borders offers an alternative approach to decision-making in VBB, by asking the following questions: 1. Is there a deviation? 2. What is causing the deviation? Is the deviation interfering with the birth? 4. Do I need to intervene? and asks the attendant to consider the fetal condition, the time elapsed and the potential morbidity caused by intervening compared to doing nothing. This decision tree is available from the Breech Without Borders Website.

Implications and limitations

This research corroborates the results of research previously conducted by Dr Shawn Walker (2017). The consensus-based care pathway and clinical skills framework could be used by any health service to support practice change and increase the level of skill within their workforce.

Table 7
Statements lacking consensus.

Statements	%	Mean	Std Deviation
Breech presentation is not "normal" just different.	57.15	2.43	0.90
Breech presentation is considered abnormal when:			
The fetus is in the footling position.	57.15	2.86	1.46
Preterm labour occurs.	57.15	2.71	1.28
There is premature rupture of membranes.	57.14 #	3.43	1.29
Footling breech defined as the fetal foot/feet are below the buttocks, buttocks not engaged in pelvis.	57.14	2.57	1.84
Women with an "abnormal" breech fetus should be discouraged from attempting a vaginal birth because:			
Some literature indicates higher risk of complications.	42.86 #	3.00	1.07
Due to an increased risk of not dilating appropriately/sufficiently due to unequal pressure on the cervix of the presenting part (i.e. Foot/feet or knee).	57.14 #	3.00	1.20
Cervical spine injuries associated with hyper extension of the head.	42.86 #	3.00	1.07
Clinician experience compared to selection criteria for vaginal breech birth is:			
Not as important because birth creates endless possibilities for unexpected changes during labour.	66.66 #	3.67	1.37
Not as important because doctors are often too quick to offer elective cesarean section for primips and utilise outdated evidence in counselling (i.e. The term breech trial).	50 #	3.50	1.38
Not as important because midwives are more experienced with vaginal breech births.	50 #	3.83	1.21
A breech expert:			
Is someone who has participated in more than 10 breech births.	50	2.67	0.75
Someone who has attended greater than 40 births.	50	2.67	1.11
Someone who has attended approximately 50 or more actual breech births.	66.66	2.33	1.25
Knows how to use piper forceps.	50 #	3.33	1.11
Has reviewed a sufficient amount of video footage of breech birth.	66.67	2.33	0.94
Can confidently participate in neonatal resuscitation.	50 #	3.00	1.53
The concept of a breech expert is not well defined or related to outcomes - there is no objective way to quantify it.	66.67	2.00	1.41
The concept of substantial experience is more important than when it comes to breech birth	50 (neutral)	2.83	1.21
Once you say you are expert you set yourself to fail.	50 #	3.17	0.90
Manoeuvres for lithotomy:			
Anterior chin tuck (for tucking a posterior head underneath the pubic bone, variations described by Maggie Banks and Carol Gautschi.	50 (Neutral)	2.50	1.12
Bratch - body and extended legs were then grasped in both hands, with the fingers around the lower back and the thumbs around the posterior aspect of the thighs, while the upward and anterior rotation of the body was maintained. When the anterior rotation was nearly complete the baby's body was held, not pressed, against the mother's symphysis using only a force equivalent to the weight of that portion of the baby already born. The mere maintenance of this position, added to the uterine contractions and, if necessary, gentle suprapubic pressure by an assistant, allowed the baby's head to deliver spontaneously in full extension.	50	2.17	0.90
Burns-Marshal (fetal feet are grasped in the non-dominant hand, adequate traction applied to prevent the neck from bending backwards and being fractured. The suboccipital region (not the neck) should pivot under the apex of the pubic arch to prevent the spinal cord from being crushed. The feet are moved through an arc of 180° until the mouth and nose are free at the vulva).	66.67	2.50	0.76
Gail Tully/Adrienne Caldwell's SAFE (Subclavicularly Activated Flexion and Expulsion).	50 (Neutral)	3.00	1.00
Situations clinicians need to be mindful of during a vaginal breech birth include a rapidly descending fetus where the placenta immediately follows.	66.66	2.17	1.07
A defining characteristic of an uncomplicated vaginal breech birth is:			
In second stage there is no directed pushing.	50 (neutral)	3.33	0.94
In second stage there is only 1 hour of active pushing.	66.67	2.50	1.26
The birth is complete within 2–3 contractions from 'rumping'.	66.67	2.67	1.11
No forceps.	50	2.67	1.49
No augmentation.	66.67	2.83	1.57
No OASIs.	66.66	2.67	1.70
No episiotomy.	50 (even divide between agree/ disagree).	3.17	1.57
Full dilation is confirmed before active pushing (unless presenting part is on view and descending).	50	2.83	1.57
A birth algorithm should not be used because there are too many variables to cover and care should be individualised to the woman/ situation.	66.67 #	3.67	1.60
"Hands off the breech" means not to touch the baby during active second stage until the cord is born or the scapula are visible.	50	3.50	2.57
For a vaginal breech birth women ideally need:			
To advise their carer of why ECV was declined or unsuccessful (if aware).	50 #	3.00	1.53
To have no contraindications.	66.66	2.33	1.25
To have no fetal anomalies.	50 (even agree/ disagree divide)	3.17	1.21
To have a healthy pregnancy (i.e. no GDM or placenta praevia).	50	2.83	0.90
To have a spontaneous onset of labour.	50 #	3.17	1.34

(*continued on next page*)

Table 7 (*continued*)

Statements	%	Mean	Std Deviation
The position a woman should adopt for a vaginal breech birth is:			
Lithotomy.	66.67 #	4.33	0.94
Dependant on the practitioner's experience.	66.67	2.33	1.60
Semi-recumbent or lateral.	50 (even divide between neutral and disagree).	4.00	1.00
A breech presentation is appropriate for a vaginal birth:			
When the fetus is term (37 or more weeks gestation).	66.67 #	3.17	1.57
When the fetus has a well flexed head.	50 (Neutral)	2.50	1.12
When there are no complications such as polyhydramnios.	66.67 #	3.50	1.26
The ideal setting/service for a vaginal breech birth:			
Is a hospital.	66.67	1.83	1.21
Is wherever the woman chooses.	50 #	3.00	1.15
Is at home	66.67 #	4.17	0.90
Is a birthing centre	50 (neutral)	3.17	1.21
Has a skilled obstetrician in the room (in case instrumental intervention is required).	66.67	2.33	1.60
The ideal model of care for women with a breech presentation:			
Is any model of care which offers minimal intervention	50 (evenly divided between agree and disagree)	2.83	1.21
The cardinal movements of a vaginal breech birth are:			
In lithotomy the scapula of the anterior arm is visible after the torso descends.	66.67	2.00	1.15
The cleft in the chest is visible, indicating the arms will birth spontaneously (if upright).	66.67	1.83	1.21
Women should not be encouraged to undergo an ECV because:			
It should be offered not encouraged.	66.67	2.17	1.34
It is unnecessary.	50 #	3.33	1.11
It is painful.	50 (neutral)	2.67	0.94
It places the woman and baby at risk of spontaneous labour.	66.67 #	3.33	1.37
Inexperienced staff handling can be dangerous	50	2.83	1.34
We should allow the breech to unfold naturally.	50 (neutral)	2.67	0.94
Breech birth counselling should include:			
A discussion about maternal assisted caesarean section.	50 (evenly divided between agree and disagree)	2.83	1.57
The woman being encouraged to discuss their situation with an 'expert' – e.g. Maggie Banks, Betty-Anne Daviss	66.67	2.00	1.53
The rationale for having no epidural.	50 (evenly divided between agree and disagree)	3.17	1.57
Discussion regarding alternative cephalic version techniques.	50	2.33	1.11
External Cephalic Version should be discussed and encouraged because:			
It has a strong evidence base.	66.6	2.33	1.25
Alternative cephalic version techniques that should be discussed with women include:			
Chiropractics.	50	2.17	1.21
Rebozo.	66.67	2.00	1.15
Osteopathy.	83.33 (neutral)	3.17	0.37
Hypnosis.	66.67 (neutral)	2.83	0.90

Table 7 (*continued*)

Statements	%	Mean	Std Deviation
Alternative cephalic version techniques should be discussed with women because:			
Some are evidenced based (acupuncture/moxibustion).	50	2.67	1.11
There is good anecdotal evidence it works.	50 (neutral)	2.83	0.69
They are unlikely to do any harm.	66.67	2.33	0.94
Antenatal sonography skills are not required for the safe support of vaginal breech birth, they are merely helpful in counselling women.	50 (evenly divided between agree and disagree).	2.83	1.21
Breech birth training for midwives and obstetricians should NOT be the same.	50 #	3.50	1.38
Because:			
Roles differ (i.e. doctors do not provide labour care).	50 #	3.50	1.61
In some places only obstetricians attend breech births.	66.66	3.67	1.25
The updating of breech birth skills should:			
Occur 6 monthly.	50 (even divide between agree and neutral)	2.17	0.90
Occur annually.	66.67	2.33	0.94
Occur every 18 months.	66.67 #	3.83	0.69
Involve 100 births per year (i.e. 1 real = 1 birth, 2 simulation births = 1 birth)	50 #	3.67	1.11
A poorly trained birth attendant increases the risk of poor outcomes more than the complete absence of an attendant.	50 (neutral)	11.50	1.61
A reason against midwives upskilling in ECV and 3rd trimester ultrasound is:			
These are medical procedures and therefore out of a midwife's scope of practice.	66.67 #	3.50	1.12
They are able to screen with palpation but need to focus on developing their core skills – promotion and support of physiology and advocating for women.	50 (neutral)	3.33	0.94
The potential risks and complications of the procedure. Emergency backup is needed in the event of adverse outcomes (i.e. should not take place in the community).	50 #	3.17	1.67
A reason for midwives upskilling in ECV and 3rd trimester ultrasound is:			
ECV cannot be offered without USS competency.	66.67	1.83	1.21

# denotes participant responses ranged from somewhat to strongly disagree.

Table 8
Footling breech.

Statements	%	Mean	Std Deviation
A footling breech is defined as the fetal:			
foot/feet are below the buttocks, buttocks is engaged in the pelvis	85.71 #	2.57	1.84
hips are extended and the feet are in the vagina.	71.43	1.57	0.9

# denotes consensus answers ranged from somewhat to strongly disagree.

The division of opinion between participants demonstrates the contentious nature of trying to achieve consensus, even amongst those supportive of breech birth. However, a primary focus of the participants was the use of evidence to inform their practice and the provision of woman-centred care. This was demonstrated by their emphasis on women's choice.

Seventy-five percent of the panel members were midwives. This has the potential to have biased results as midwifery philosophies focus on a holistic approach to caring for women and are founded on the relationship between a woman and her midwife and generally favour low intervention approaches to care. Midwives are bound by professional standards to incorporate evidence-based, woman-centred care into practice while considering the woman's individual expectations and needs within her own context as she herself defines them (Morris et al., 2021c). This may account for the dominant view of breech presentation as a 'normal' phenomenon and hands off/poised approach to breech birth in this study. Nevertheless, the entire panel unanimously supported VBB and the provision of breech care through midwifery continuity models. Such models are currently operating in the UK through the Opti-breech Trial (Dasgupta et al., 2023). Dasgupta et al. (2023) have found the appointment of Breech Specialist Midwives highly acceptable to women and a feasible implementation strategy for providing woman-centred, physiological breech birth care. Similar to Midwifery Group Practices (MGPs) in Australia, these specialist midwives provide care across the childbearing continuum with an on-call component for intrapartum care (Dasgupta et al., 2023).

When compared to their obstetric counterparts who primarily work in designated shifts, midwives in continuity models are uniquely situated to fulfil these specialist roles. If health services around the globe adopted a similar implementation strategy as described by Dasgupta et al. (2023), this could help address the *Quadruple Aims of Healthcare (Arnetz et al., 2020)* by:

- Improving the experience of women diagnosed with a breech presentation near or at term.
- Improving the knowledge and clinical skills of midwives and other health clinicians in relation to breech care and birth.
- Improving maternal and neonatal clinical outcomes through the development of specialised skills and knowledge to provide optimal care and support throughout the breech birth process.
- Advancing and empowering the midwifery profession and other maternity care providers.
- Improving the pervasive negative culture surrounding breech birth currently limiting women's autonomy.

It must also be acknowledged that the lead investigator is a midwife by profession and values the ideals of midwifery philosophy. This has the potential to influence the way in which questions were structured and responses were interpreted. To reduce the influence of the lead researcher's potential biases, the initial open-ended questions received approval from the university ethics committee (the majority of whom are not clinicians) and the questions and statements in subsequent rounds were reviewed by the researcher's supervisors prior to the dissemination. While the findings of this study are not generalizable due to the small sample size, strengths of the study include the collective and individual experience of the panel, geographical dispersion of participants and differing levels of experience in divergent practice settings (i.e. hospital, home birth and birth centre experience). This study also adds to the expanding body of knowledge about supporting women with breech presenting fetuses and breech birth.

Conclusion

This article focuses on some of the findings from a three-round e-Delphi: The Breech Care Pathway and Clinical Skills Framework. While the findings are not generalizable, they are supported by and validate previous research and adds to the expanding body of knowledge regarding breech presentation and birth. Physiological breech birth courses such as BABE course in Australia and those taught by others internationally by organisations such as the Breech Birth Network and Breech Without Borders; are helping to shift the culture of fear surrounding breech birth through normalising breech presentation and promoting knowledge of the mechanisms and evidence-based, non-biased counselling of women experiencing a breech presentation. The care pathway and skills development framework can be used by services wishing to make changes to their current practices related to breech presentation and increase the level of skill in their workforce.

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Author agreement:

- I/we agree that the article is my/our original work
- The article has not been received prior publication and is not under consideration for publication elsewhere
- All authors have seen and approved the manuscript being submitted
- The authors abide by the copyright terms and conditions of Elsevier

Ethical statement:

- Permission to undertake the study was gained from the Edith Cowan University Human Research Ethics Committee (ECU HREC) – Project number 19,566 MORRIS. The date of approval was 22/10/2018.

CRediT authorship contribution statement

Sara Morris: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Visualization, Project administration. **Sadie Geraghty:** Writing – review & editing, Supervision, Formal analysis. **Deborah Sundin:** Writing – review & editing, Supervision.

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Supplementary materials

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