Minnesota Council of Certified Professional Midwives (MCCPM)

CLINICAL GUIDELINE: VAGINAL BIRTH AFTER CESAREAN IN THE OUT-OF-HOSPITAL SETTING

Based on the Midwives Association of Washington State Clinical Guideline:
Vaginal Birth After Cesarean in the Out of Hospital Setting

1. INTRODUCTION:

In the face of a national epidemic of primary cesarean section, limited opportunities for birthing people to access vaginal birth after cesarean (VBAC) and the strong desire of a portion of MN midwifery consumers to have their VBACs at home, the purpose of this guideline is to present the current evidence regarding VBACs, to assist midwives with shared decision making with clients, and to offer a guide to clinical decision-making for midwives in Minnesota providing care to people with a history of prior cesarean section in the OOH setting. This guideline is meant to assist midwives and families in making decisions, and to serve as a guide for practice rather than to replace the midwife's own clinical judgment, which is based on their experience, common sense, and knowledge.

Vaginal birth after cesarean (VBAC) rates in the United States increased during the late 1980's through the mid-1990's but have decreased steadily each year since 1996 after a study (McMahon, 1996) showed an increase in major morbidity with failed VBAC, followed by American Congress of Obstetrics and Gynecologists (ACOG) guidelines (1998, 1999) that recommended continuous physician availability throughout all VBAC trials of labor. Following the 2010 National Institutes of Health Consensus Summit on VBAC ACOG revised its position on VBAC to acknowledge that "most women with one previous cesarean delivery with a low-transverse incision are candidates for...TOLAC", but ACOG continued to recommend that Trials of Labor after Cesarean (TOLAC) be undertaken in facilities with staff immediately available to provide care in the event of a rare catastrophic emergency. The SOCG (2005) recommends that if a TOLAC is taking place, staff and set up for a cesarean should be available within 30 minutes. The AAFP does not require TOLAC to occur in facilities with immediate surgical ability, but they do recommend all people desiring VBAC "should be counseled about the capabilities of their specific delivery setting, and people determined to be at high risk for complications with either labor and vaginal birth after cesarean or repeat cesarean birth should be referred to facilities capable of effectively treating problems as they develop" (AAFP, 2014).

The most recent Centers for Disease Control (CDC) data (2014) available estimates the cesarean section rate nationally to stand at 32.2%. Nationally VBAC rates are approximately 10% (NIH, 2010). In Minnesota the total cesarean section rate was 26.9% (VBACrates.com, 2014). The option for a trial of labor (TOL) has become limited or non-existent in areas with small community hospitals lacking 24-hour in-house surgical capability pursuant to ACOG's VBAC policy. Increasing use of OB hospitalists and 24hr OB staff has, in some instances, increased access to VBAC in metropolitan hospitals. Both the American Congress of Obstetricians and Gynecologists and The American Academy of Family Practice have noted that current risk management policies surrounding VBAC "appear to be based on malpractice concerns, rather than statistical or scientific evidence."(AAFP, 2005; ACOG 2010)

Numerous studies indicate that in the absence of contraindications VBAC is a safe choice for birthing people. One study found that the absolute risk of an adverse perinatal outcome for a birthing person with a history of one prior low –transverse cesarean section is approximately the same as the background risk for any nulliparous client. (Rozen, 2009) Another study found that people planning an OOH VBAC who also have a history of previous vaginal birth are at a lower risk level than a nulliparous client. (Cox, 2015) However, risks to the birthing person and fetus/neonate are still perceived to be increased in VBAC and concerns about the appropriate place of birth, safety, and medico-legal issues influence the discussions shaping practices and access to VBAC options. Midwives sometimes face hostility from the medical community if they consider attending VBAC in the home setting. The lack of research regarding out-of-hospital (OOH) VBAC makes the decision to provide care for birthing people desiring a home birth after a cesarean section an individual choice for each provider.

Although there is an abundance of literature on the subject of VBAC and elective repeat cesarean section (ERCS), there are many flaws inherent in the research and deficiencies in the literature about the risks and benefits of TOL versus ERCS for low risk, healthy people. This makes it difficult for pregnant people and clinicians alike to make truly informed decisions about appropriate birth choices. Specifically, there is scant research regarding outcomes and best practice in OOH VBAC (Lieberman, 2004; David, 2009). Most of the research discussed in this guideline studied hospital based VBAC. The ambiguous conclusions of the literature regarding the safety of VBAC, particularly with regard to site of birth, have resulted

in limited birth location choices for people with prior cesarean births. Yet some people who have undergone prior cesarean sections still desire vaginal birth and out-of-hospital birth site options. There is a clear demand for OOH VBAC services provided by midwives in Minnesota.

The studies, reports, and guidelines cited in this document were identified using multiple searches of the PubMed database, Cochrane systematic reviews and controlled trials registry from reference lists of systematic reviews, and from local and national experts. Search terms included: vaginal birth after cesarean, safety, trial of labor, out-of-hospital, clinical practice guidelines, uterine rupture, birth center, uterine thinning, maternal and fetal morbidity.

2. DEFINITIONS

- ERCS: Elective Repeat Cesarean Section
- HBAC: Home Birth After Cesarean
- OOH: Out of Hospital
- TOL: Trial of Labor
- TOLAC: Trial of Labor after Cesarean
- VBAC: Vaginal Birth After Cesarean

3. RISKS/BENEFITS

Both planned ERCSs and VBACs come with a set of risks and benefits for the birthing person and fetus/neonate. When VBAC is successful, it is associated with less morbidity than repeat cesarean birth. However, when a VBAC TOL results in another cesarean, maternal morbidity is often higher. It is critical that clients have a clear understanding of the risks and benefits of VBAC compared with ERCS, and the issues specific to VBAC in the out of hospital setting. Clients should be given time to ask questions, research, and make informed decisions regarding their care.

3.1 BENEFITS OF VAGINAL BIRTH AFTER CESAREAN

Successful VBAC results in a decrease in maternal morbidity and increase in satisfaction compared to ERCS:

- Lower rates of infection (6.7% VBAC versus 8.6-9.7% ERCS) (AHRQ, 2003)
- Shorter hospital stays (Loebel, 2004; Mozurkewich, 2000; McMahon, 1996; Keedle, 2015)
- Increased feeling of control in decision-making process (Ridley, 2002)
- Increased client satisfaction (Enkin, 2000; Keedle 2015)
- Less postpartum discomfort & faster recovery (Fawcett, 1994; Keedle, 2015)

It should be noted that in the subgroup of people who have an unsuccessful VBAC trial of labor, studies consistently report a higher rate of maternal morbidity than in those having an ERCS (see next section).

Although only six studies currently exist for out-of-hospital VBAC with midwives, the evidence is favorable:

- The VBAC success rate is higher with midwives in birth centers, than in a hospital setting, 73.5-87% (David et al, 2009; Lieberman et al, 2004) vs. 60-82% success rate in hospital (AHRQ, 2003)
- The VBAC success rate at home has been found to be 77.8-87%. (Beckmann, 2014; Cox, 2015)
- When planning to have a VBAC at home, the VBAC success rate was even higher for people who had a previous vaginal birth (90.2%) (Cox, 2015), and even higher for those who had a previous VBAC (95.6%) (Cox 2015).
- OOH births are not assisted by forceps or vacuum (associated with a higher risk of rupture)
- OOH labors are not induced or augmented with oxytocin or prostaglandins, resulting in:
  - higher VBAC success rates by about 10% (AHRQ, 2003)
  - lower risk of uterine rupture by 35-45% (AHRQ, 2003)
- Birthing people have reported feeing joy, empowerment, and healing of previous cesarean birth after a successful VBAC in an OOH setting (Keedle, 2015)

It has been noted that the intrapartum transfer rate for people planning a VBAC ranged from 21.7-38.3%, compared to 4.6-8.5% for multiparous people who did not previously have a cesarean birth. (Cox, 2015; Beckmann, 2014) The majority of these transfers in labor have been for a slow, non-progressive labor and not for a uterine rupture or other emergent cause. (Cox, 2015)

3.2 RISKS OF VAGINAL BIRTH AFTER CESAREAN

Given the intensely personal decision making involved in choosing to plan a VBAC, randomized controlled trials are not possible in this instance. Therefore, there are no controlled trials that compare all risks to the birthing person and fetus/ neonate amongst spontaneous VBAC trials of labor, induced or augmented trials of labor, and ERCS.

The most-discussed risk for VBAC/TOL is uterine rupture. The risk of uterine rupture in a person with no prior cesarean is about 0.006%, or 6 in 10,000 (Miller, 1997). In reviewing the literature, it is important, and difficult, to distinguish between symptomatic uterine rupture and asymptomatic uterine dehiscences. Symptomatic uterine rupture is most often characterized by FHR disturbances or bleeding, and is definitively diagnosed upon cesarean section. There is no significant difference in the rates of asymptomatic rupture between VBAC and ERCS. The risk of symptomatic uterine rupture for people undergoing a TOL is 0.47%, 10 times higher than for people undergoing an ERCD (0.03%) (AHRQ, 2010). One review of the literature discovered that "370 (213 to 1370) elective cesarean deliveries would need to be performed to prevent one symptomatic uterine rupture" (Guise, 2004).

The overall risk of rupture increases with any induction method at term. Studies have found the rate of rupture when using induction/augmentation methods was between 0.9% and 2.3% (AHRQ, 2010; Landon, 2004; Lyndon-Rochelle, 2001; Goer 2012; Zelop, 1999).

When symptomatic uterine rupture does occur, it can be a catastrophic event for both the birthing person and fetus, and it requires emergency medical and surgical intervention. Significant risks to the birthing person include hemorrhage, bladder damage, and an increased risk of hysterectomy (4.8/10,000) (Leung, 1993; Helewa, 1999; AHRQ, 2003). Consequences to the neonate may include neurological injury (30%) and death (5%) (AHRQ, 2003). When uterine rupture does occur during a planned VBAC, the risk of perinatal death following a uterine rupture is 6.2%. (Goer, 2012)

When comparing successful VBAC, unsuccessful VBAC, and ERCS, people who experienced an unsuccessful VBAC have an increased risk of maternal adverse outcomes, compared with successful VBAC or ERCS. In particular, when a TOL fails, maternal morbidity is 17%, which is much higher than 3.1% for people having a successful VBAC. (Rossi, 2008)

Landon et al (2004) examined the effect of successful versus unsuccessful VBAC on the rates of maternal morbidity and found significantly greater morbidity with unsuccessful VBAC in all of the following risk areas:

	Successful VBAC	Unsuccessful TOL	ERCS
Uterine Rupture	0.1%	2.3%	0
Uterine dehiscence	0.1%	2.1%	0.5%
Hysterectomy	0.1%	0.5%	0.3%
Transfusion	1.2%	3.2%	1%
Endometritis	0.1%	7.7%	1.8%

Figure 1. (Landon, 2004)

3.3 BENEFITS OF ELECTIVE REPEAT CESAREAN BIRTH

The benefits of ERCS include:

- Decreased rates of uterine rupture and its associated fetal and maternal morbidities compared to VBAC trial of labor
- Decreased maternal morbidity compared to an unsuccessful VBAC (Landon, 2004)

3.4 RISKS OF ELECTIVE CESAREAN BIRTH

The risks of ERCS are the same as risks associated with all cesarean birth, which have been relatively well documented but poorly quantified.

3.4.1 Risks to the birthing person include:

- Increased maternal mortality rate (13.4 per 100,000 with planned ERCS vs 3.8 per 100,000 with planned VBAC) (Guise, 2010)
- Increased likelihood of hysterectomy (4.3 per 1,000 with planned ERCS vs 2.2 per 1,000 with planned VBAC) (Goer, 2012)
- ERCS is associated with embolic events at higher rates than TOL (0.1% versus 0.04%) (AHRQ, 2010)

- Increased risk of blood transfusion (Lowest risk of transfusion is with planned VBAC ending in vaginal birth, next lowest risk of transfusion is with a planned VBAC ending in a cesarean, the highest risk for transfusion is with a planned ERCS (Goer, 2012)
- Anesthesia complications
- Rehospitalization (RR 1.8, 95% CI 1.6-1.9) (Lyndon-Rochelle, 2001)
- Longer hospital stay (Guise, 2010)
- Interruption of infant bonding in the immediate postpartum period
- Placenta previa or accreta in future pregnancies (see Figure 2). (Goer, 2012)
- Accumulated risks increase with multiple cesareans (see Figure 3). (Goer, 2012)

Risk in current pregnancy with a history of increasing number of past cesareans	Rate of Placenta Previa	Rate of Accreta	Rate of Accreta with previously diagnosed Previa (in the same pregnancy)	Risk of Hysterectomy Rate secondary to Previa
One Prior	0.9%	0.3-0.6%	11-14%	10%
Two Prior	1.7%	0.6%	23-40%	45%
Two or More Prior	2.6%	1.4%	30%	Not Available
Three Prior	Not Available	2.1%	Not Available	Not Available
Three or More Prior	3%		35-61%	50-67%
Four Prior	Not Available	2.3%	50-67%	Not Available
Four or More Prior	Not Available	4.7%	Not Available	50%
Five or More Prior	Not Available	6.7%	67%	Not Available

Figure 2. (Goer, 2012)

Risk in current pregnancy with a history of increasing number of past cesareans	Rate of Bladder Injuries	Rate of Hysterectomy	Rates of Transfusion	Rates of Adhesions
One Prior Cesarean	0.9 per 1,000	4.2 per 1000	1.8%	24-26%
Two Prior Cesareans	2.8 per 1,000	9.0 per 1000	2.6%	43%
Two or More Prior Cesareans	16.0 per 1,000	Not Available	Not Available	46-49%
Three Prior Cesareans	11.7 per 1,000	24.1 per 1000	4.3%	18%
Three or More Prior Cesareans	Not Available	Not Available	Not Available	48%
Four Prior Cesareans	19.4 per 1,000	34.9 per 1000	4.6%	Not Available
Five or more prior Cesareans	44.9 per 1,000	89.9 per 1000	14.6%	Not Available

Figure 3. (Goer, 2012)

3.4.2 Risks to the neonate include:

- A higher rate of transient tachypnea of the newborn and persistent pulmonary hypertension, and concomitant admission to the Neonatal Intensive Care Unit, septic work up and newborn separation (OR 2.3, 95% CI 1.4 – 3.8) (Hook, 1997)
- In all cesarean birth, there is a small risk to the fetus of laceration (0.5-1.5%) (Haas, 2002; Wiener, 2002)
- One study that examined outcomes for planned OOH VBACS found an increased neonatal mortality rate of 4.75 out of 1000 compared with a rate of 1.24 out of 1000 in multiparous people without a history of cesarean. However, it is notable that 3 of the 5 neonatal deaths in this study likely had nothing to do with the fact that the uterus was previous scarred. (Cox, 2015)

4. RISK ASSESSMENT AND PREDICTORS OF SUCCESS

Reports of successful VBAC rates in the US are 74% (Guise, 2010), but, to date, VBAC has not been well studied in OOH settings. It is critical that clients have a clear understanding of the risks and benefits of VBAC compared with ERCS, and the issues specific to VBAC in the OOH setting.

During shared decision making conversations, when planning a VBAC in an OOH setting, the midwife and client should examine closely those factors that may favorably impact the likelihood of success and minimize the risk of adverse perinatal outcomes.

Several factors have been consistently identified as being strong predictors of VBAC success:

- Spontaneous labor (not induced or augmented) (Huang et al. 2002; Macones et al. 2005; Landon 2004)
- One or more prior successful VBAC (see figure 4) (Macones 2001; Grobman 2007; Landon 2004; Goer 2012)
- Non- recurrent reason for the prior cesarean section (breech presentation, multiple gestation or placenta previa) (Flamm, 1990)
- Prior vaginal birth (see figure 5) (Zelop ,1999; Macones, 2005**;** Landon, 2006; Goer, 2012)
- Age of the birthing person <40 years (Flamm, 1990; Shipp et al, 2002)
- Favorable cervical factors (Pickhardt, 1992; Flamm, 1990; Macones, et al 2001)
- Strong client desire for a vaginal birth (Enkin, 2000)

Factors associated with reduced risk of uterine rupture during VBAC:

- Interval between births >18-24 months (Huang et al, 2002; Bujold et al, 2002)
- Term, versus preterm cesarean section (Scisione et al, 2008; Harper et al, 2009)
- Both prior vaginal birth and prior successful VBAC have been confirmed as being protective for uterine rupture (see figure 4, 5, and 6) (Goer, 2012)

Number of Prior VBACs	Risk of uterine rupture with increasing previous hx of VBAC	VBAC Success Rate with increasing previous hx of VBAC
Zero	0.8%-1.9%	60-76%
One or more	0.3%-0.6%	90-97%
Two or more	0.4%	Not available

Figure 4. (Goer, 2012)

Number of Prior Vaginal Births	Risk of uterine rupture with increasing previous hx of Vaginal Birth	VBAC Success Rate with increasing previous hx of Vaginal Birth
Zero	1.4-1.6%	60-79%
One	0.3-1.3%	75-95%

Figure 5. (Goer, 2012)

Number of Prior Cesarean Births	VBAC Success Rate with increasing previous hx of Cesarean Births
Two	72%
Three or more with no prior vaginal births	74%
Three or more with at least one prior vaginal births	91%

Figure 6. (Goer, 2012)

Factors which have been associated with decreased likelihood of VBAC success:

- More than one prior cesarean section (Macones et al, 2005)
- Age of the birthing person >40 (Shipp et al, 2002)
- Increase BMI and Obesity (Srinivas et al, 2007; Guise 2010)
- Fetal macrosomia (>4000g) (Zelop, 2001; Guise, 2010)

- Induction methods (Goer, 2012)
- Gestational age greater than>40wks (Coassolo et al, 2005)

Additional factors affecting VBAC success:

- Race and Ethnicity, Hispanic and African American birthing people have an increased likelihood of planning a TOL but had a decreased VBAC success rate compared with non-Hispanic and white birthing people (20% vs 49% respectively (Guise, 2010)
- Location, Rural and private hospitals have decreased rates of TOL and decreased rates of VBAC (57%) versus tertiary care centers (66%) (Guise, 2010)

Risk of other complications:

- Abnormal placental implantation on or around the uterine scar can increase the incidence of placenta accreta and percreta, as well as placenta previa. (Gabbe, Singh et al, 1981; Chattopadhyay et al, 1993)

Because of the additional risk factors involved, additional discussion, consideration and consultation with another midwife should take place if considering an OOH VBAC for a client who:

- Has had a prior vertical (classical) cesarean incision, or if the incision was extended during the surgery.
- Has a fetus in a non-vertex presentation
- Has a multiple pregnancy
- Has had more than one prior cesarean section

5. CONSIDERATIONS FOR PRACTICE

Midwifery is based on mutual trust and respect, both for the birth process and for the unique qualities of clients and their families. As the issue of VBAC has political implications, the OOH birth midwives choosing to offer VBAC services is charged with additional responsibilities for themselves, their clients, and the midwifery community.

5.1 SHARED DECISION-MAKING

Shared decision making is a key component of midwifery philosophy and practice. In the shared decision making process, it is helpful if the partner is included and educated regarding the potential risks and benefits of OOH VBAC and ERCS. The process of shared decision-making should be documented and can include:

- Full disclosure of the midwife's experience with OOH VBAC and that of any attending birth assistant
- Receipt of surgical records (or documented reasonable effort) and reviewing records to reveal the circumstances surrounding the prior cesarean section and the surgery itself
- Signed VBAC shared decision-making document or documented discussion, including the risks and benefits of TOL and of choosing an OOH VBAC

The midwife may also recommend that the client read other midwifery and obstetrical guidelines on VBAC as they explore their options, and contact International Cesarean Awareness Network (ICAN) and other VBAC support services in order to be as fully informed as possible.

5.2 PROFESSIONAL LIABILITY (MALPRACTICE) COVERAGE

Midwives must disclose if they do not carry professional liability (malpractice) insurance. If they do carry professional liability (malpractice) insurance, they must dsiclose if it excludes VBACs in the OOH setting.

5.3 CLOSE MONITORING OF VITAL SIGNS OF LABORING PERSON AND FETUS

Studies indicate the following may be signs of impending or actual uterine rupture. During labor the midwife should be vigilant in monitoring for:

- Abnormal fetal heart rate patterns such as bradycardia, or decelerations of any kind. (Ridgeway et al, 2004; Menihan, 1998; Ayres et al, 2001; Leung, 1993)
- Abnormal vital signs of the laboring person: Abnormal abdominal pain, increased vaginal bleeding, hematuria, tachycardia, or hypotension as well as loss of fetal station or palpable uterine defect. (Fang et al, 2006)
- Dystocial labor pattern: deviation from normal progression of labor may be significant risk factor for uterine rupture. (Hamilton et al, 2001; Khan et al, 1995)

5.4 DISTANCE TO THE NEAREST HOSPITAL

Consideration must be given to distance and time required for transport when planning an OOH VBAC. Studies indicate that timing of the cesarean section is critical in the event that a uterine rupture occurs. Increased morbidity/mortality occurs when cesarean section is delayed with a uterine rupture. (Leung et al, 1993) If possible, the nearest hospital with emergency cesarean capability should be less than 20 minutes from the planned birth site. The client should understand that, in the unlikely event of a catastrophic uterine rupture, an emergency cesarean birth even within this time frame will not necessarily guarantee a healthy outcome. Midwife and client should also consider factors such weather, traffic, and the resources and staffing available at the nearest hospital. If it is not possible, due to rural or remote location, for the planned birthing location to be less than 20 minutes to the nearest hospital with emergency cesarean capability, this component should be addressed and documented in the informed consent process.

5.5 CONSULTATION/TRANSFER OF CARE

Because midwives attending OOH VBAC may be interfacing with an unsupportive medical community or personnel, they will find themselves best able to deal with adversity if they consults according to the Minnesota Midwives' Guild Standards of Care document and utilizes the Home Birth Summit Transfer Guidelines. It is critical that midwives accompany their client to the hospital in the event of a transfer during labor. This also includes providing all relevant medical records to the admitting facility.

5.6 INDUCTION OF LABOR

Pharmacologic induction or augmentation of labor has been found to increase the likelihood of uterine rupture in people undergoing TOLAC (Zelop et al, 1999; Lyndon-Rochelle, 2001; AHRQ, 2010; Landon, 2004; Goer, 20121). Other non-pharmacological methods commonly employed by midwives for induction purposes including but not limited to castor oil, evening primrose oil or herbs have not been adequately studied in VBAC candidates. Each individual midwife must exercise their own clinical judgment around using non-pharmacological methods for induction with a VBAC candidate.

Several recent studies have investigated the risks associated with mechanical ripening of the cervix using foley catheters. Rupture rates of between 0.76% (Ravasia, 2000) and 6.5% (Hoffman, 2004) have been identified. Cervical ripening with a foley balloon in people undergoing TOLAC in the OOH setting cannot be recommended given the limited and conflicting data.

5.7 DIAGNOSTIC TESTING

Ultrasound may be useful to assess a variety of factors that have been associated with poor outcomes, such as, placenta placement near the cervix or the uterine scar.

6. RECOMMENDATIONS FOR PRACTICE

The following recommendations are not meant to be an exhaustive list and are intended to serve as a guide for practice rather than to replace the midwife's own clinical judgment, which is based on their experience, common sense, and knowledge.

- Engage in a thorough shared decision-making process including but not limited to risks and benefits of TOL in both a hospital and OOH setting, political issues, lack of malpractice coverage, expectations regarding the client's personal responsibility in their care, and the midwife's practice protocol for OOH VBAC
- Obtain a signed shared decision making or informed consent document discussing the risks and benefits of OOH VBAC or documented discussion in client's chart
- Obtain surgical records to determine the type of incision, the type of repair, and the timing between Cesarean and current EDD. If unable to obtain previous records, document that a reasonable efforts was made.
- A plan for transfer of care for PN, IPP, and PP should be discussed and considered prenatally
- During prenatal care the midwife should offer resources to the client to help process the previous birth, especially if the client feels that it was traumatic
- During prenatal care the midwife should offer resources for body work (chiropractic, craniosacral therapy, etc.) to encourage optimal fetal positioning
- Consider encouraging client to hire a doula who is experienced in supporting VBACs
- Consult with a second midwife about accepting client into OOH care according to the Minnesota Midwifery Guild Standards of Care
- The nearest hospital with emergency cesarean capability should ideally be less than 20 minutes from the planned birth site. If this is not possible, due to rural or remote location, this component should be addressed and documented in the informed consent process.

- Close monitoring of the laboring person and fetus throughout labor and birth and timely transport with non-reassuring fetal heart rate patterns, such as bradycardia, loss of variability or decelerations. Fetal heart tones should be closely monitored according to established guidelines for intermittent auscultation (for 60 seconds every 15-30 minutes in the first stage of labor and every 5-10 minutes in the second stage of labor (AWHONN/SOGC 2002). The midwife should be alert to any signs of tachycardia or hypotension in the laboring person, as well as, abnormal abdominal pain, abnormal vaginal bleeding, hematuria, tetanic contraction or palpable uterine defect. Vitals (blood pressure, pulse, temperature) should be evaluated every 2 hours. Consider the use of vaginal exams to identify abnormal labor patterns or lack of descent of the fetus. Consider having a second midwife plan to assist at the birth if available.
- In the event of a hospital transport, the midwife will accompany the client in order to facilitate the transfer and ensure that all relevant records are given to the hospital staff. Midwives should refer to the Home Birth Summit Transfer Guideline for further information.

7. CONCLUSION:

With careful consideration, good shared decision making, and comfort of midwife and client, OOH VBAC can be a safe and viable choice of birthing people in Minnesota.

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