
TRIAL OF LABOR AFTER cesarean delivery (TOLAC) is a planned attempt to delivery vaginally by a pregnant person who has had a previous cesarean delivery. Achieving a vaginal birth after cesarean (VBAC) is one outcome of TOLAC, with repeat cesarean being another possible outcome of TOLAC. The achievement of VBAC avoids major abdominal surgery, results in lower rates of hemorrhage, thromboembolism, and infection and decreases risks in future pregnancies of various sequelae including abnormal placentation. Achieving VBAC results in fewer complications than elective repeat cesarean without a trial of labor, whereas a failed TOLAC is associated with more complication than elective repeat cesarean. The most serious risk associated with TOLAC is uterine rupture or dehiscence.

In 60% to 80% of TOLAC cases, VBAC is achieved. The probability of achieving a VBAC varies depending on individual factors for each person. Each person’s candidacy for TOLAC should be determined by that person and their care provider considering individual factors alongside the general risks and benefits of TOLAC.

Factors to be considered include location and type of prior uterine incision, history of other uterine surgery, number of previous cesareans, estimated fetal weight, maternal obesity, possibility of future pregnancies, patient interest in TOLAC, and patient understanding and acceptance of the benefit and risk of TOLAC.

In this article, the American College of Obstetricians and Gynecologists (ACOG) evaluates scientific evidence and then makes graded recommendations regarding TOLAC and VBAC based on evidence, consensus, and opinion. Level A recommendations are those based on good and consistent scientific evidence. These include that a person with one previous cesarean delivery with a low-transverse incision should be offered TOLAC, and that misoprostol is not an acceptable medication for induction in patients with a history of any major uterine surgery including cesarean.

Level B recommendations are those based on limited or inconsistent scientific evidence. Those include that people with a history of classical uterine incision, T-incision, prior uterine rupture, or history of transfundal surgery are recommended to deliver via cesarean section, those with a history of two previous cesarean deliveries with low-transverse incisions are reasonable candidates for TOLAC, external cephalic version for breech presentation is not contraindicated for those with a history of low-transverse incision, induction continued on page 28.
of labor is an appropriate option for people undergoing TOLAC, and continuous fetal heart rate monitoring should be utilized during TOLAC.

Level C recommendations are those based primarily on consensus and expert opinion. The Level C recommendation that trial of labor after previous cesarean delivery take place in a facility capable of performing emergency cesarean remains. The ACOG, the Society for Maternal-Fetal Medicine, and various international guidelines are in agreement on this recommendation. The ACOG acknowledges that this may limit access to TOLAC, while also stating that restricting access was not the intention of this recommendation. Rather, the majority of data on safety of TOLAC is from centers capable of performing emergency cesarean delivery, and therefore the safety of TOLAC can only be assured in such a facility. Comparative data examining different types of facilities’ emergency response time and maternal and neonatal outcomes are not available. This guideline acknowledges that a person may choose to undergo TOLAC in a facility without access to immediate emergency cesarean, but the person must be clearly informed of the risks of this choice, and an evaluation of the person’s individual factors, their likelihood of achieving VBAC, and their risk of uterine rupture is of paramount importance. Ideally, transfer of care to a provider working in a facility capable of performing emergency cesarean occurs during prenatal care, and providers must begin informed choice discussions early in care. According to this bulletin, home or free-standing birth centers are contraindicated for a person undergoing TOLAC.


Reviewed by HEIDI FILLMORE, CPM


IN 2009, THE KING’S COLLEGE

Hospital in South East London, England closed the Albany Midwifery Practice, a service that had been serving this diverse and socially disadvantaged community since the early 1990s. The sudden closure, which was said to have been instigated by concerns over safety, created quite a stir. The frustration and disappointment was evident in the response from the community as this unique and successful midwifery service was dissolved, leaving fewer options for care.

The Albany Midwifery Practice started as the South East London Midwifery Group Practice, by 6 midwives based in a community center. They were the first group of self-employed midwives to negotiate a contract with the NHS and their mission was to help address disparities in health and healthcare by providing community-based, caseload model care to a demographic known to have poor health outcomes. In 1997, the service negotiated a new contract with King’s College Hospital and became fully integrated into King’s NHS maternity service, giving its clients full access to medical and social services at no cost. The contract specified that Albany would serve 216 pregnant people in the borough of Southwark, which at the time was ranked the 14th most deprived district in England. Each client was assigned 2 midwives at booking who provided continuous prenatal, intrapartum and postpartum care. The Albany midwives offered birth services in both the hospital and home setting, with an average home birth rate of 43.5% during their 12 years of service.

A 2007 internal report at King’s praised the outcomes of the Albany Midwifery Service and boasted a 99% breastfeeding rate, an 81.4% spontaneous vaginal birth rate, and a low caesarean section rate of 15.2% for the service. There were various qualitative studies done showing high levels of satisfaction by clients after experiencing this unique model of care. It was not surprising then, that only 2 years later when King’s decided to close the practice, the decision was surrounded in controversy and received much publicity. The fact that Albany attended nearly half of the births in the clients home made it unique, and perhaps a target for negative attention.

As an exploration into the accuracy of the claims made by King’s upon the closure of Albany Midwifery Service, a retrospective analysis of routinely collected data was done by four researchers to look at the outcomes for all 2568 clients who were booked with the Albany Midwifery Practice from 1997 to 2009. The results were published in Midwifery Journal in 2017 and are an inspiring testament to the value of midwifery care delivered in this caseload model to vulnerable populations. Although the people included in the study were from a higher-risk demographic, the outcomes were often better than England’s national average.

The study cohort was 36% white, 57% were from BAME (Black, Asian, Minority Ethnic) groups, 35% lived in public housing, around 33% were
single parents, 42.8% were Nullips, 18.5% had a previous Caesarean birth. There were 44 breech deliveries, 21 sets of twins, and one set of triplets. While this is not a group typically considered to have the best outcomes, the findings are remarkably good. The following is a sampling of the outcomes found: 16% caesarean sections, 9.9% epidural, rate, 6.5% induction, 5.9% post partum hemorrhage (vaginal birth only), 5.1% preterm birth, 4.5% low birth weight, 4.1% 5 minute APGAR ≤7, perinatal mortality rate (PMR) (>24 weeks gestation) 5.78 per thousand, lower than the national PMR rate for England as a whole during a similar period of time (7.5-8.5 per 1000).

The authors compared the outcomes of white clients to those of BAME (Black, Asian, Minority Ethnic) clients and found that the same disparities found among people of color in the United States were reflected in the data. Rates of prematurity and low birth weight were almost double in the BAME group as compared to white babies. Caesarean section rates for white clients was 11.4% as compared to 18.8% for BAME clients.

Although there are serious limitations that come with such a small, retrospective study, particularly with regard to perinatal mortality rates, it is apparent that the care provided by the Albany Midwifery Service resulted in significant benefit to the community it served. Decreased levels of medical interventions and lower prematurity rates and low birth weight as compared with the national rates are just a few of the findings. In fact, one might conclude that this caseload model which uses individualized midwifery care in the setting of the client’s choice and is well-supported by the local maternity care system might be a model to emulate rather than eliminate.

### Neonatal Outcomes with Water Birth

**Reviewed by ABBY HALL LUCA, CPM**


**WHILE THE USE OF WATER** immersion for pain relief in the first stage of labor is known to be a safe and effective form of non-pharmacological analgesia, questions persist about the safety for the neonate of water immersion during second stage and at the moment of birth. Citing this knowledge gap, the study authors set out to answer the following research question through systematic review and meta-analysis: “whether water birth was associated with poor neonatal outcomes as measured by APGAR, need for resuscitation, pneumonia, neonatal infection, neonatal respiratory distress, neonatal hypothermia, umbilical pH, shoulder dystocia, cord avulsion, neonatal intensive care unit (NICU) admission, and neonatal mortality.”

Studies included in this meta-analysis were found via a systematic review of all related content on 5 databases using a generous key-word search. There were no limitations on language or date of publication (data collection ranged from 1982 to 2013, with a majority of the research coming from the late nineties and early aughts), and studies were only included if they considered hospital-based water birth versus a control group for full-term infants born to people with a low-risk status, defined most commonly as term singleton pregnancies with known cephalic presentation. Thirty-nine studies were found to meet the specified criteria, and the studies represent 28,529 births, of which 12,592 occurred under water. Risk analysis of the studies included showed moderate to low risk of general bias, which authors break down into several discrete categories and address thoroughly.

Meta-analysis of the 39 studies resulted in the exclusion of cord avulsion and 1-minute APGAR as dependent variables, as the former was only included in one study and the latter showed more variability than possible by chance alone. Other findings include the following:

- Waterbirth was shown, in 4 studies, to have no effect on rates of shoulder dystocia, a finding that has remained unchanged since 1999. Five-minute APGAR scores were also unchanged in water versus conventional birth, as shown in 17 studies, and have reliably been so since 1995. Six included studies showed no difference in rates of need for resuscitation with no change since 2004. Umbilical pH showed no difference over 7 studies, a finding that has been stable since 1997.

Infection was divided into pneumonia and “other types of infections” due to a perceived difference in associated risks. Four studies found that water birth posed no additional risk as compared to conventional birth with regard to rates of pneumonia, and 13 showed a reduction in rates of non-pneumonia infections when birth happened in water, a finding that has held steady since 2004.

The incidence of NICU admission (17 studies) was lower in water birth groups and has reliably been so since 2001, though the authors could not rule out bias in favor of water birth in the studies in question. Neonatal hypothermia (4 studies) and respiratory distress (5 studies) were also reduced in water birth, and there was no difference found in neonatal death (4 studies), but there were too few studies available to determine the stability of these 3 statistics over time, and they may be a reflection of bias in favor of water birth.

Based on these findings, study authors make the assessment that water birth does not increase the odds for low risk cases of poor neonatal outcomes when compared to conventional birth, that it may improve some neonatal outcomes (though it is unclear whether these improvements are reflections of provider bias), and that these findings will most likely continue to be reliable with future study. The authors call for additional research into the future to address different water birth protocols and their unique effects on neonatal outcomes in order to inform best practices in the hospital use of water birth.
Mapping integration of midwives across the United States: Impact on access, equity, and outcomes

Reviewed by ISABELLE MARGERIT


AS CERTIFIED PROFESSIONAL Midwives (CPMs) navigate the waters of licensing and regulation, many have argued that their integration—and the elevation of midwives in general within the maternity care system—is critical for improving birth outcomes. On a global level, the idea of midwifery integration and utilization as the condition for improving outcomes is gaining momentum. The Lancet’s 2014 Midwifery Series, for example, established national investment in midwives as crucial in achieving maternal health goals. The excellent outcomes in countries where midwives form the core of the maternity care system is well established. However, to date, data on the integration and utilization of midwives in the US has not been available.

In Mapping integration of midwives across the United States: Impact on access, equity, and outcomes, Vedam et al. create a composite measure of midwifery integration called the Midwifery Integration Scoring System (MISS) and rank states using this system. The authors also look at how the rates of several major maternal-newborn outcomes—spontaneous vaginal delivery (SVD), vaginal birth after cesarean (VBAC), exclusive breastfeeding, and at six months, cesarean, preterm birth, low birth weight, and neonatal death—correlate with MISS scores, the density of midwives, and access to care across birth settings. The authors used hierarchical linear regression analysis to control for the confounding effects of race.

Interdisciplinary and consensus building methods Vedam et al.’s research is the result of a five-year multidisciplinary effort. A diverse task force identified 110 key variables from a database of regulatory data from all 50 states and the District of Columbia. The goal was to identify the differences, across jurisdictions, in scope of practice, autonomy, governance, and prescriptive authority. Using this data, they investigated whether or not regulatory restrictions affect patient safety, quality of care, and access to maternity providers across birth settings. To verify the “on the ground” relevance and implementation of these state laws, they conducted a survey of 92 state regulatory experts, the leaders of state midwifery associations, and state legislative and policy chairs for the American College of Nurse Midwives (ACNM) and National Association of Certified Professional Midwives (NACPM). In states where midwifery is not integrated or regulated, ACNM and NACPM legislative directors referred the authors to local midwifery experts who could reliably speak to “on the ground” conditions.

Key findings MISS scores rank states on a scale of 100 points, where higher indicates a better integration of midwives. For 2014 to 2016, the MISS scores range from 17 in North Carolina to 61 in Washington. Higher MISS scores were associated with significantly higher rates of SVD, VBAC, and breastfeeding, and significantly lower rates of cesarean, preterm birth, low birth weight infants, and neonatal death. Higher MISS scores also correlated with increased density of midwives and better access to care across birth settings. The correlation of newborn outcomes with MISS scores persisted, even after controlling for the proportion of African American births in each state.

Implications for policy and research The authors are very clear that the associations illustrated by their research do not necessarily imply causation. One cannot conclude, from their research, that better access to midwives of all types leads to better outcomes. “However,” the authors state, “it does show that the best outcomes for mothers and babies occur in states where all types of midwives are regulated and integrated into the health care system regardless of birth setting.” The authors suggest that the states with the highest MISS scores could serve as models for states seeking to improve the integration of midwives. They note that even Washington, the state with the highest MISS score, only meets two thirds (61/100) of the conditions of a fully integrated system of care.

In addition to choice of birthplace and choice of care provider, Vedam et al. also addresses the impact of race. The paper includes a map that illustrates race-specific outcomes. In the states with the highest proportions of black people, access to midwives who are well integrated into the system is lower and neonatal mortality rates are higher.

This paper is one of several that introduce composite indicators that attempt to root the maternity care debate in measurable evidence. The Principle Investigator’s work, for example, introduces a scoring system for mothers’ experiences of respect and safety in maternity care. These quantitative efforts often reinforce what many midwives know, in their hearts, to be true—that midwifery care can contribute enormously to access, choice, equity, diversity, safety, respect, and autonomy in the birthplace.