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Provider Variations in Cesarean Section (CS) and Vaginal Birth After Cesarean (VBAC) Practice

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PROVIDER VARIATIONS IN CESAREAN SECTION (CS) AND VAGINAL BIRTHS AFTER CESAREAN (VBAC) PRACTICE

by

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ABSTRACT

Provider Variations in Cesarean Section (CS) and

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The Centers for Disease Control and Prevention's National Center for Health Statistics (2010) report that nearly one-third of babies were born by Cesarean section (CS) in 2007. Of interest, six states, including Nevada, experienced increases of more than 70% in the last 10 years (CDC, 2007). Based on the increased rate of CS deliveries, the National Institutes of Health (NIH) convened a consensus panel in 2010, which urged the medical community to reduce barriers to women who want to try a vaginal birth after Cesarean delivery (VBAC) in the hope this would safely decrease the total CS rate. For clinicians and patients, outcomes research provides evidence about benefits, risks, and results of treatments so they can make more informed decisions. Utilization and inpatient quality indicators examine procedures whose use varies significantly across hospitals and for which questions arise about overuse, underuse, or misuse (AHRQ, 2006). Experts examine Cesarean delivery and VBAC rates because safety and quality and appropriate use of limited medical resources may be compromised with the current and further increase of CS rates. The AHRQ states that VBAC may be an underused procedure (AHRQ, 2006). Maternity safety and quality are key underlying elements to the significance of this capstone. Available data indicate that CS delivery is the most common operative procedure performed in the United States and is associated with higher costs than vaginal delivery and increased maternal morbidity (AHRQ, 2007; Smaill & Gyte, 2010). Although current practice guidelines exist with the recommendation to offer VBAC to selected clients, there is increasing evidence that

VBAC rates are decreasing (CDC, 2010), especially in Nevada with Southern Nevada specifically composing the majority of the State's population. Therefore, the primary purpose of this capstone was to conduct a pilot study to examine CS and VBAC practices in Southern Nevada and to further determine if there are provider variations in CS and VBAC practices in the nearby regional areas to Southern Nevada including Tucson, Arizona, Salt Lake City, Utah, San Diego, California, and Reno, Nevada. A descriptive survey design was used for this study with participant recruitment targeted toward physicians and nurse-midwives who provide prenatal care and perform newborn deliveries in the hospital. Results indicate that there is a significant variation in regional providers related to CS and VBAC in that in Southern Nevada, providers perform more CS and offer less VBAC than in the regions compared; Salt Lake City providers performed the least CS and offered VBAC most often.

Despite a relatively low response rate in this study, for this sample, there were significant differences found and these differences suggest safety and quality concerns related to maternity care in Southern Nevada. Based on these data, a more formalized and rigorous study, utilizing experienced researchers and clinicians is warranted and recommended.

Keywords: Cesarean section (CS), vaginal birth after Cesarean (VBAC), provider practices, utilization indicators, quality indicators

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CHAPTER I

Provider Variations in Cesarean Section (CS) and Vaginal Births After Cesarean (VBAC) Practice

Background

The Centers of Disease Control (2010) and Prevention's National Center for Health Statistics (2010) report that nearly one-third of babies were born by Cesarean section (CS) in 2007. Moreover, between 1996 and 2007, birth certificate data indicate that the CS rate rose by 53% (CDC, 2010). Of interest, six states, Colorado, Connecticut, Florida, Washington, Rhode Island, and Nevada, experienced increases of more than 70% (CDC, 2007). In the late 1990s CS rates had a slight decrease; however, the pace of the increase has accelerated since 2000, from 23% to 32% in 2007 (CDC, 2010). Based on the increased rate of CS deliveries, the National Institutes of Health (NIH) convened a consensus panel on March 2010, which urged the medical community to reduce barriers to women who want to try a vaginal birth after CS (VBAC) in the hope that this would safely decrease the total rate of CS deliveries. The NIH (2010, p. 1) panel was asked to consider the following questions:

- What are the rates and patterns of utilization of trial of labor after prior Cesarean, VBAC, and repeat Cesarean delivery in the United States?
- Among women who attempt a trial of labor after prior Cesarean, what is the vaginal delivery rate and the factors that influence it?
- What are the short- and long-term benefits and risks to the mother of attempting a trial of labor after Cesarean versus elective repeat Cesarean delivery?

- What are the short-and long-term benefits and risks to the baby of the maternal attempt of trial of labor and prior Cesarean, versus elective repeat Cesarean delivery?
- What are the nonmedical factors that influence the patterns and utilization of trial of labor after prior Cesarean delivery?
- What are the critical gaps in the evidence for decision-making and what are the priority investigations needed to address these gaps?

Outcomes research seeks to understand the results of particular health care practices and interventions (AHRQ, 2000). For clinicians and patients, outcomes research provides evidence about benefits, risks, and results of treatments so they can make more informed decisions. For health care managers and purchasers, outcomes research can identify potentially effective strategies they can implement to improve the utilization and quality of care. Outcomes research related to both utilization and inpatient quality indicators for VBAC and CS serve as additional background information for this capstone and as such are briefly discussed below.

In the area of outcomes research, utilization indicators examine procedures whose use varies significantly across hospitals and for which questions have been raised about overuse, underuse, or misuse. Three of these utilization indicators are: (a) primary CS delivery rate, (b) VBAC rate, and (c) VBAC rate, uncomplicated (AHRQ, 2006).

Inpatient quality indicators examine how hospitals in the United States provide the setting for some of life's most pivotal events—the birth of a child, major surgery, and treatment for otherwise fatal illnesses. The inpatient quality indicators represent the current state-of-the art in measuring the quality of hospital care through analysis of

inpatient discharge data (AHRQ, year). The AHRQ Quality Indicators are used for applications beyond quality improvement. Accruing data regarding quality indicators and inpatient quality indicators provide a comprehensive view of the level and variation of quality within four components of health care quality—effectiveness, safety, timeliness, and patient centeredness (AHRQ, 2007).

Problem

Nevada's CS delivery rate has risen markedly in the past 12 years with a corresponding falling VBAC rate. The CS delivery rate in Nevada has risen 70% in the last 12 years to the current rate of 33.8% against the United States rate of 32.3%. The VBAC rate has decreased in Nevada from 23% in 1996 to 8.5% in 2007 (CDC, 2010; Menacher & Hamilton, 2010). The rising total Cesarean rate in Nevada is creating higher costs of women's health care, increased hospital charges and longer admissions or re-admissions, increased insurance payments, and increased physical and psychological stress to women, babies, and their families. Moreover, safety and quality and appropriate use of our limited resources may be compromised with the current and further increase of CS rates. Southern Nevada is specifically addressed in this study because the majority of the State's population resides in the southern part of the State.

Purpose

Although appropriateness of CS delivery may depend largely on patients' clinical characteristics, studies have shown that individual physician practice patterns account for a significant portion of the variation in CS delivery rates (AHRQ, 2007). Practice and provider variation related to CS and VBAC rates in Southern Nevada and surrounding areas are not clearly delineated in the available national statistics and literature and may

need deeper examination. Therefore, the primary purpose of this capstone was to conduct a pilot study to examine CS and VBAC practices in Southern Nevada and to further determine if there are provider variations in CS and VBAC practices in the surrounding geographical regions of Tucson, Arizona, Salt Lake City Utah, San Diego, California, and Reno, Nevada. The secondary purpose of this capstone was to provide preliminary data on current provider practices of maternity care related to CS and VBAC as a possible starting point for the understanding the variations and to identify possible areas where interventions may promote more evidence-based consistent and/or standardized utilization of services/recourses and quality care.

Significance

Maternity safety and quality are key underlying concepts related to the significance of this capstone. Available data indicate that CS delivery is the most common operative procedure performed in the United States and is associated with higher costs than vaginal delivery (AHRQ, 2007; Aron, Harper, Shapardson, & Rosenthal, 1998). Despite a recent increase in the rate of Cesarean deliveries, many organizations have aimed to monitor and reduce the rate. The AHRQ (2007, p. 60) has determined through their examination of Inpatient Quality Indicators that "Cesarean delivery has been identified as an overused procedure. As such, lower rates represent better quality." AHRQ further stipulates that decreasing the primary Cesarean delivery rate or increasing the VBAC rate can decrease the total Cesarean delivery rate. The Centers of Disease Control (CDC, 2010) National Center for Health Statistics places Nevada at number 16 in the Cesarean delivery rate per capita at 33.8%. However, of added concern in Nevada's CS delivery rate is that Nevada is one of six states that

experienced increases of more than 70% in the last 10 years and correlational decrease of VBACs from 23% in 1996 down to 8.5% (CDC. 2010).

Although CS delivery is currently the most commonly performed major surgical procedure in the United States (Aron, Harper, Shepardson, & Rosenthal, 1998), CS delivery is not without its risks. Smaill and Gyte (2010) report that the most important risk factor for postpartum maternal infection is CS delivery. The researchers concluded that women undergoing Cesarean delivery have a five to 20-fold greater chance of getting an infection compared with women who give birth vaginally (Smaill & Gyte, 2010). Although Cesarean section is a common abdominal operation for surgical delivery of a baby and the placenta, factors such as duration of the surgical procedure and maternal blood loss, postoperative pain, continuing blood loss, development of anemia, fever, wound infection, problems with urination or breastfeeding, and complications in future pregnancies must be taken into account (Dodd, Anderson, & Gates, 2008).

Policy Implications

Hospitals and health plans are often ranked on rates of Cesarean delivery, under the assumption that lower rates reflect more appropriate, more efficient care (Aron, Harper, Shepardson, & Rosenthal, 1998). Aron, et al. (p. 1968), performed a retrospective cohort study to determine the main outcome measures—hospital rankings based on observed and risk-adjusted Cesarean delivery rates. The researchers summarized that consumers and purchasers are increasingly scrutinizing provider performance, and comparative report cards are often publicized (Aron et al., 1998). Although the clinical appropriateness of Cesarean delivery is rarely measured, Cesarean delivery rates remain a commonly used yardstick for comparing hospitals and health

plans (Geller, Cox, & Kilpatrick, 2006). Mendoza-Sassi, Cesar, Silva, Denardin, and Rodriguez (2010), went as far as to analyze the rate of Cesarean section and differences in risk factors by category of health service, either public or private. They concluded that the rate of Cesarean section was 43% and 86% among public and private sectors respectively. In simplified terms, the Cesarean rate was twice as high among women cared for in the private sector. Facts and rates similar to these prompts an examination of the reason for the increasing Cesarean delivery rate and a re-evaluation of current VBAC guidelines and malpractice concerns that elicit repeated Cesarean deliveries (Pfeifer, 2010).

Definition of Terms

- Trial of labor is a planned attempt to labor by a woman who has had a previous cesarean delivery, also known as trial of labor after cesarean [TOLAC], (NIH, 2010; ACOG, 2010).
- Vaginal birth after cesarean delivery (VBAC) is a vaginal delivery after a trial of labor; that is, a successful trial of labor (NIH, 2010).
- Elective repeat cesarean delivery is a planned CS delivery in a woman who has had one or more prior cesarean deliveries. The delivery may be scheduled (NIH, 2010).
- Primary Cesarean delivery rate is calculated as the number of women having a first Cesarean delivery divided by the number of live births to women who have never had a Cesarean delivery, multiplied by 100. The denominator for this rate excludes those with method of delivery classified

as repeat Cesarean, vaginal birth after previous Cesarean, or method not stated (March of Dimes, 2007).

- VBAC rate (vaginal birth after Cesarean) is calculated as the number of repeat Cesarean deliveries resulting in a live birth divided by the sum of VBAC and repeat Cesarean deliveries, multiplied by 100 (March of Dimes, 2007).
- Total Cesarean section rate is calculated as the number of births delivered by Cesarean section divided by the number of live births less the not-stated values for delivery method, multiplied by 100 (March of Dimes, 2007).
- Repeat Cesarean section rate is calculated as the number of repeat Cesarean deliveries resulting in a live birth divided by the sum of VBAC and repeat Cesarean deliveries, multiplied by 100 (March of Dimes, 2007).
- Inpatient quality indicators are a set of measures that can be used with hospital inpatient discharge data to provide a perspective on quality. The inpatient quality indicators include a variety of indicators, which are measured at the provider, hospital, or area level (AHRQ, 2007).
- Utilization indicators examine procedures whose use varies significantly across hospitals or areas, and for which questions have been raised about overuse, underuse, or misuse (AHRQ, 2007). High or low rates for these indicators are likely to represent inappropriate or inefficient delivery of care (AHRQ, 2006).

CHAPTER II

Review of Literature

Available data indicates that CS rates have reached a record high in the United States, with one-third babies born that way in 2008 (Srinivas, Fager, & Lorch, 2010). As an outcome measure, the target rate supported by Healthy People 2010 to 2020 is 15% of the women giving birth for the first time and 63% of women with a history of a prior CS delivery (USDHHS, 2009). The goal established by Healthy People 2010 would increase indirectly the VBAC rates (ARHQ, 2010). The U.S. CS rate has increased for 11 consecutive years, rising to the highest rate of 32.3% in 2007. The rate of VBAC has declined 73% from 1997 to a rate of 9.7% in 2006 (USDHHS, 2009). Nevada, for example, has a CS rate of 33.8%, placing the state at number 16, with New Jersey at the highest rate at 38.7% (CDC, 2010). Despite the increases in the CS rate, the United States has not made substantial improvement in the maternal and neonatal morbidity and mortality rates; and is moving further away from objectives set for Healthy People 2010 (USDHHS, 2009). Increases in the CS rate do not correlate with better perinatal outcomes (USDHHS, 2009; Srinivas, Fager, & Lorch, 2010; Gonan, et al., 2006; Kamath et al., 2009; Aron, et al., 1998). VBAC as type of utilization indicator, is measured with very good precision, and according to the literature, it is likely that the observed differences represent true differences in provider performance rather than random variation (AHRQ, 2006). The purpose of this project was to compare regional differences in VBAC practices because VBAC has been identified as a potentially underused procedure, and as such, higher rates represent better quality (AHRQ, 2006; CDC, 2010; Gonan, et al., 2006; Srinivas, Fager & Lorch, 2010). The specific aim of this

project was to gather provider survey responses in Nevada and surrounding areas for the reasons they offer VBAC or not.

Cesarean Delivery and VBAC Outcomes Research

For clinicians and patients, outcomes research provides evidence about benefits, risks, and results of treatments (such as performing a VBAC) so they can make more informed decisions (AHRQ, 2000). The AHRQ (2006) suggests that rather than rely solely on biomedical measures to determine whether a health intervention is necessary or successful, outcomes research measures how people function and provides information about their experiences with health care. General health surveys and quality measures assist in assessing changes in disease patterns, treatment patterns, and the significance of interventions at all levels (ARHQ, 2006).

Utilization and Inpatient Quality Indicators

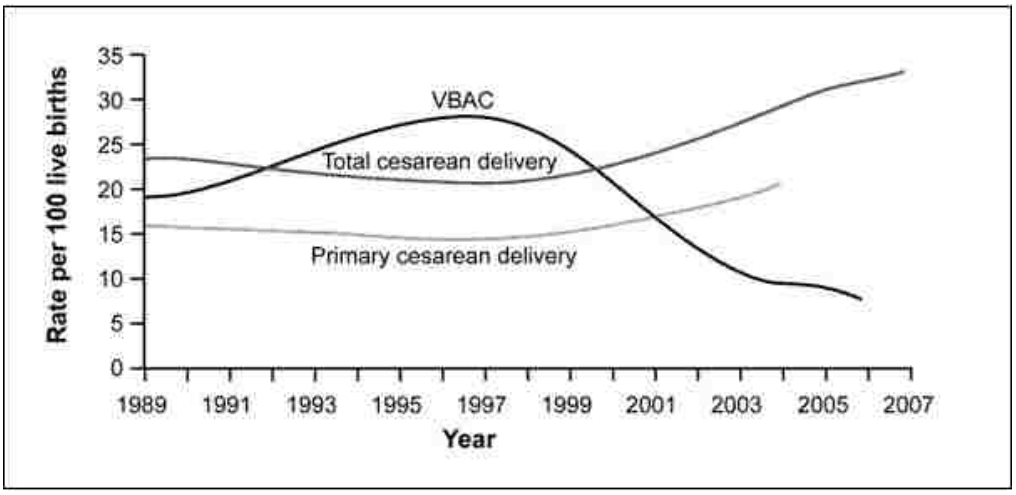
Utilization indicators and inpatient quality indicators (IQIs) provide tools to monitor and improve quality of care (AHRQ, 2007). Utilization indicators and IQIs for CS and VBACs are determined through hospital inpatient discharge data, birth certificate data, and insurance diagnosis codes (CDC, 2010). Both indicators provide a perspective on quality. Inpatient quality indicators especially contribute specific information on volume, mortality on inpatient procedures and conditions, and utilization (AHRQ, 2006). More definitively, the AHRQ (2006) indicated that in relationship to quality and because CS delivery is the most common operative procedure performed in the United States, CS delivery has been identified as an overused procedure and is associated with higher costs than vaginal delivery. Empirical evidence demonstrates that CS delivery is measured with good precision using risk adjustment of certain clinical characteristics such as prior

CS delivery, abnormal fetal presentation, preterm, fetal death, multiple gestation, and cord complications in the denominator (Baskett, 2008). Conversely, VBAC has been identified as a potentially underused procedure and as such higher rates represent better quality [Figure 1], (AHRQ, 2006; NIH, 2010; Menacker & Hamilton, 2010; Srinivas et al., 2010).

Benefits and Risks of VBAC

Several studies in the literature regarding the benefits and risks of VBAC and trial of labor were found in the literature search for this capstone. The most threatening risk associated with VBAC is uterine rupture, however the risk of less than one per 1000 deliveries has not changed (Kieser & Baskett, 2002). However, the CS rate continues to increase. The advantage of successful VBAC is reduced maternal morbidity compared with repeat elective CS (Coassala et al., 2005; Gonen et al., 2006; Kieser & Baskett, 2002; Russillo et al., 2008). The benefits include shorter hospital stays, less maternal morbidity, such as fever, infection, and hemorrhage, and improved patient perception of care (Gonen, Nisenblat, Barak, & Ohel, 2006). Available data from clinical research coincides with the ACOG practice guidelines suggesting clinicians lower the CS rate by offering VBAC to selected clients.

Figure 1. Rates of Total Cesarean Deliveries, Primary Cesarean Deliveries, and Vaginal Birth After Cesarean (VBAC), 1989 to 2007



Source: Data from the National Center for Health Statistics (NIH, 2010).

Barriers to VBACs

Given the available evidence, trial of labor is a reasonable option for many pregnant women with one prior low transverse uterine incision (Algert, et al., 2008; Guise, et al., 2010; NIH, 2010; Russillo, et al., 2007). The review of literature supports pregnant women with one prior transverse uterine incision to make informed decisions about trial of labor compared with elective repeat CS (Algert, et al., 2008; Guise, et al., 2010; NIH, 2010; Russillo, et al., 2007; Shorten et al., 2005). The consensus panel at the National Institutes of Health (2010) recommended clinicians and other providers of maternity care assimilate the recommendations provided to incorporate an evidence-based approach into the decision-making process (see Appendix C). Information and risk assessment should be shared with the woman at a level and pace she can understand (NIH, 2010; Shorten, et al., 2005). An important factor is that when a trial of labor and elective repeat CS are medically equivalent options, a shared decision-making process should be adopted and whenever possible, the woman's preferences should be honored

(Denk et al., 2006; Gonen et al, 2006; Guise et al., 2010; Montgomery et al, 2007; NIH, 2010; Shorten et al., 2005). The research question for this project is to determine why providers are not offering VBAC as an option in Nevada and surrounding areas when there is compelling evidence for the efficacy (see Appendix B).

Current Clinical Practice Guidelines Regarding VBACs

The American College of Obstetricians and Gynecologists (ACOG) adopted clinical management practice guidelines in 2010 as researched through meta-analyses and systematic review of the evidence by the NIH for the AHRQ (see Appendixes B and C). The guideline is published in the National Guideline Clearinghouse (NGC) as *Guideline Summary NDC-7959*: *Vaginal Birth After Previous Cesarean Delivery* (2010). The guideline may be summarized as:

- "To aid practitioners in making decisions about appropriate obstetric and gynecologic care" and
- "To review the current risks and benefits of a trial of labor after previous cesarean delivery (TOLAC) in various clinical situations and provide practical guidelines for managing and counseling patients who will give birth after a previous cesarean delivery" (NGC, 2010, p. 1).

The target population is pregnant women who have had a previous CS delivery-preferably by a low transverse uterine incision (ACOG, 2010); and recommendations were formulated by expert consensus (NIH, 2010). Based on the highest level of evidence found in the data, recommendations were provided in all three categories Level A through Level C (NGC,

2010). Essentially, this means that in addition to fulfilling a patient's preference for

vaginal delivery, at an individual level, VBAC is associated with decreased maternal morbidity and a decreased risk of complications in future pregnancies. At a population level, VBAC also is associated with a decrease in the overall CS rate (ACOG, 2010). The NIH (2010) consensus panel clearly recommends that hospitals, maternal-child health providers, health care and professional liability insurance carriers, consumers, and policy makers collaborate on the development of integrated services that could mitigate current barriers to VBAC. The consensus panel was concerned about the current effect of the medical-legal environment in all states that has affected access to care and may have increased barriers to VBAC (NIH, 2010). For comparison, Appendix D shows a recent local hospital policy incorporating VBAC in obstetrical care.

CHAPTER III

Conceptual Framework

Epidemiological Framework for Delivery of Health Care

In the Epidemiological Framework for Delivery of Health Care, Oleske, (2009) opines that driving the need for more evaluation at every level of health care services, private or public, is the ever-increasing costs of health care such that continued increased spending may not necessarily produce the desired outcomes. The ability to interpret and apply findings from program evaluations and study designs is also a critical competency for an evidence-based practitioner, whether that individual is an epidemiologist or a health care manager. Use of this framework is the basis for guiding practice and making policy decisions for hospitals, health care practices, and practitioners. In the application of this framework, Nascetti, Ancarani, Wani, and Gaddi (2000), view this model as one of a process by which health, services, and resources are connected to each other. This model helps health providers understand the genesis and consequences of health problems, understand the relationship between health systems, the characteristics, and the health of populations served. One notable value is the response to public policy affecting the delivery of health care services (Geller, Cox, & Kilpatrick, 2006).

An epidemiological model of the delivery of health care services guides in identifying the information required for program evaluation or practice guidelines (Oleste, 2009). Specifically, epidemiology provides a framework for "planning, monitoring the health of a population, identifying changes in risk factors over time, and prioritizing health problems requiring correction" (Clement & Wan, as cited in Oleste, 2009, p. 92). Epidemiologic measures and study designs are the basis of the analytic

approaches for evaluating if programs are effective in preventing and controlling disease, disability, injury, and other health problems in populations receiving health care services. The epidemiological framework of the delivery of health care services presents an overview in selecting the appropriate study design for determining the most effective health care delivery strategies.

Epidemiological Model for the Assessment of Health Model

The epidemiological study design for evaluating health services is based on a model of planning, implementation, and intervention that all lead to monitoring and feedback (Oleske, 2009). The planning phase depicts the defined population, their identified health problems, formulated objectives, established evaluation criteria, and defined interventions. The implementation phase outlines activities to support the achievement of goals and objectives, activities to support delivery of interventions, and process measurements. In the case of increasing Cesarean rates, implementation focuses on the establishment of mechanisms to ensure adequate scope of coverage, integrity, and safety of the intervention in the target population (women with a history of prior Cesarean delivery). Intervention is the delivery of the change activities at the individual, community, or policy levels (Gilligan, 2002).

Theory of Obstetrics

Joseph (2007) introduced his theory of obstetrics to reconcile the contemporary divide between obstetric theory and obstetric practice. In his study, Joseph relates his epidemiologic model to show a causal framework and the basis for obstetric intervention in early delivery. The same model can be applied when applying results of a well-

defined protocol for a trial of labor after prior Cesarean delivery (Gonen, Nisenblat, Barak, Tamir, & Ohel, 2006).

CHAPTER IV

Project Plan and Methodology

Ethical Considerations

Prior to the recruitment of participants, approval to conduct this study was obtained from the Institutional Review Board (IRB) of the University of Nevada, Las Vegas. The project was reviewed according to the federal regulatory statutes 45CFR46, and was deemed exempt from needing IRB approval. The student investigator completed the required CITI course and complied with all ethical principles to protect the rights, safety, and welfare of participants in the study. To maintain privacy and confidentiality, participants' personal identification information was not required on the online or mailed survey. The participants were informed of the benefit and minimal risk of answering the survey questions prior to continuation of the survey tool.

Design, Setting, and Sample

This study utilized a descriptive comparative survey design to examine CS and VBAC practices in Southern Nevada and compared the findings to providers in the nearby geographical regions of Tucson, Arizona, Salt Lake City, Utah, San Diego, California, and Reno, Nevada. The setting to complete the study survey was the choice of completing either the online survey or paper-and-pencil, mailed survey. An online survey application (SurveyMonkey©) and a mailed paper-and-pencil version of the survey were used to collect data. The survey, developed by the student investigator (see Appendix A), consisted of 23 questions, 13 of which provided demographic information about the provider-participant; the remaining questions were designed to elicit CS and VBAC practices of the providers practicing in the five regional areas chosen for the

study. A qualitative comment section was available for explanation of why providers do or do not perform VBAC.

The target population consisted of physicians and nurse-midwives who provide prenatal care, perform newborn deliveries, and perform CS deliveries. The accessible population included obstetric providers in Las Vegas, Tucson, Salt Lake City, San Diego, and Reno for whom the student investigator obtained e-mails (approximately 700) and approximately 425 provider office addresses for the mailed survey. The lower number of mailed surveys was due to a limited budget, limited ancillary personnel, and the change of plan late into the implementation phase. The e-mail contact list was obtained from regional ACOG member lists; regional member lists from the American College of Nurse-Midwives (ACNM), and online directories. It was originally anticipated that the sample would include approximately 200-250 responding obstetric providers; however, early into data collection, it was clear that the response rate was going to be very low. An *a* priori power analysis had indicated that for Chi Square analysis with an medium effect size power of 0.3, alpha probability of 0.05, and 0.80 power (1-beta probability), df 4, that a sample of 133 would be needed to demonstrate provider differences if such differences did indeed exist. Given a slightly larger effect size (0.35), a smaller sample of only 98 would be sufficient (per SAS G-power analysis software).

Inclusion/Exclusion

Inclusion criteria included physicians and nurse-midwives who provide prenatal care, perform newborn deliveries in the hospital, and either performs or assists in CS deliveries and was willing to consent to participate. Consent was assumed by the participants' willingness to complete the survey. There were no particular exclusion

criteria other than not meeting the inclusion criteria above or those obstetric providers who currently perform exclusive birthing center or home births.

Procedure

Instrument

The survey developed for this study was based on the review of the literature and consulting with obstetric experts. The survey was formatted onto an online survey application Survey Monkey© and sent via e-mail to 700 obstetric providers from the ACOG member list in Las Vegas, Reno, Tucson, Salt Lake City, and San Diego; a letter of introduction and informed consent preceded the actual instrument (see Appendix A). Implied consent was given when the participant proceeded to the next page to begin the survey. Subsequently because of a low response rate, a paper-and-pencil version of the survey with informed consent letter was mailed via the U.S. Postal Service to 425 providers in the five cities using the same ACOG member list, augmented by provider names found on the online database Health Grades. The cities other than Las Vegas were chosen for their proximity to Las Vegas, similarity in population size, and similarity in expected provider and obstetric practices. Data were collected between September 1, 2011 and ended January 31, 2012. There was no cost associated with the online survey format, however costs for the mailed, paper copy was about $1500 for office supplies, postage, and ancillary personnel.

Data Analysis

Data analyses were completed using statistical tests appropriate to the respective level of data measurement. Descriptive statistics were used for demographic data (means, SD, frequencies, and percentages) and Chi Square G-test (likelihood ratio) were

used for assessing differences among the regional providers. Pearson Product moment was used for interval and non-interval level data to determine correlation.

CHAPTER V

Implementation and Primary Results

Implementation

After Institutional Review Board (IRB) approval from the University of Nevada, Las Vegas (see Appendix E), implementation began with online searches of provider e-mails and telephone calls to individual physician practices for e-mail addresses. After obtaining about 700 provider email addresses divided equally in the five cities, an invitation to participate was sent to approximately 700 provider e-mail addresses. Forty-five provider addresses were returned as "undeliverable." These were checked individually and re-sent. Email survey reminders were sent to all 700 provider email addresses in October 2011 and November 2011. Total participation for the online survey was dismal with only 23 respondents by mid-December 2011. The next phase was to revise the implementation plan to initiate a mailed, paper-and-pencil survey to as many providers in each city as possible, using the ACOG member list and names from the online database Health Grades, allowing a mailed, written response by January 7, 2012, although data collection continued until January 31, 2012 to allow improved response rate.

The mailed, paper-and-pencil survey required a budget for printing, copying, postage, and online research for provider office addresses and revision of the originally planned data collection and analysis dates. The student researcher self-funded the revised plan with personal income. Many paper-and-pencil surveys were hand-delivered to local providers as well as 25 surveys in San Diego and 25 surveys in Tucson. A total of 425 paper surveys mailed had a date of termination and appreciation added as a personal note.

Telephone calls to individual providers were made as reminders during the remainder of the implementation phase. The total number of responses received was 106 by January 31, 2012, and data collection was terminated January 31, 2012. As surveys were returned by mail, by way of a self-addressed, stamped envelope, data were entered into an Excel data sheet by the student investigator. Data were subsequently uploaded to the SPSS statistical application program and data analysis was conducted with the assistance of the student researcher's study faculty.

Sample Description

Data from the mailed responses received was added to the Excel worksheet along with the original 23 respondents of the online survey. The number of physician and nurse-midwife participants responding was 106, of which 93 were physicians (91%). However, most nurse-midwife providers did not include their own CS rate for births managed by the CNM, the nurse-midwifery program attended, or the number of hospitals they had staff privileges. Therefore, for all comparative analyses, only physician responses were considered and analyzed. The final sample size for this study was n= 93. A post hoc power analysis using a slightly higher effect size (0.35) than used in the *a* priori power analysis (0.30) indicated a computed achieved power of 0.77 indicating that this study was slightly underpowered (SAS G-Power Analysis software).

The number of MD/DO participants reporting from each city was: Las Vegas/Henderson (n=24*),* or 25.8%; Reno/Carson City (n=11*),* or 11.8%; Salt Lake City (n=28), or 30.1%; Tucson (n=15), or 16.1%; and San Diego (n=15), or 16.1% (See Table 1). The mean provider age was 47.5 years; ages ranged from 30 years to 76 years. In this

sample (n=93), female participants were 42, or 45.2% and 51 participants, or 54.8% were male.

Other demographic information revealed 75 providers in this sample are in group practice (80.6%), while 18 are sole practitioners (19.4%). MDs totaled 90 (96.8%) as compared to three DOs (3.2%). In this sample, board-certified participants equaled 92.5%, 2.2% were previously board-certified, and 3.2% were never board-certified. ACOG membership was almost comparable to board certification, numbering 84, or 90.3%, with 4.3% while currently not a member, were an ACOG member in the past.

Table 1: Number of MD/DO respondents from each city (n=93).

Please indicate the region in which you primarily practice	Frequency	Percent
Salt Lake City Area	28	30.1%
Las Vegas/Henderson Area	24	25.8%
San Diego Area	15	16.1%
Tucson Area	15	16.1%
Reno/Sparks Area	11	11.8%
Total	**93**	100.0%

Another important demographic interest was whether providers were on staff at more than one or two hospitals. In this sample 31.2% (29) providers were not on staff at more than one hospital and 68.8% (64) were on staff at more than one hospital. Analysis of the providers in this sample (n=93) showed 28% (26) were on staff at more than two

hospitals, and 71% (66) were on staff at more than one hospital but not more than two hospitals (see Table 2).

Table 2: Providers on staff at more than two hospitals

Are you on staff at more than two hospitals?	Frequency	Percent
No	67	72.1%
Yes	26	28%
Total	**93**	100.0%

The main practice question was: "Do you perform VBAC?" Of the participating respondents (n=93), 57 replied "yes" and 33 replied "no" (p = .001), [see Table 3]. A second practice question was: "Do you routinely screen your patients as VBAC candidates"? In this sample, 56 participants answered "yes" and 34 replied "no".

The third practice question was: "Do you routinely use clinical practice guidelines" (see Table 4)? The providers respondents answered: Always 74, or 79.6%; sometimes 19.4, or 19.4%; and never 1, or 1.1%.

Table 3: Practice Question: Do you perform VBAC?

Do you perform VBAC?	Practice region				
	Tucson Area	Las Vegas/ Henderson Area	Salt Lake City Area	Reno/Sparks Area	San Diego Area
No	5	18	5	6	2
Yes	10	6	23	5	13
Total	15	24	28	11	15
Percent VBAC performed	96%	25%	82%	46%	87%

N=*93;* (Likelihood Ratio [G-test] = 29.991, p = 0.000)

Table 4: Practice Question: Do you use clinical practice guidelines?

Do you use clinical practice guidelines?	Frequency	Percent
Always	74	79.6%
Sometimes	18	19.4%
Never	1	1.1%
Total	**93**	100.0%

The primary questions for the capstone were analyzed with the Likelihood Ratio or G-test type of Chi Square. From the review of the literature, proportional differences were expected and significant statistical differences were noted in the Las Vegas/Henderson area in this sample (See Table 3). In this sample, there is a statistically significant difference in providers who perform VBAC in Salt Lake City, San Diego, Tucson, and Reno areas, as compared to the Las Vegas/Henderson (Southern Nevada) area.

CHAPTER VI

Secondary Results, Discussion, and Conclusion

Additional Results and Discussion

For those clinicians who perform VBAC, it appears that there may be a relationship to using clinical practice guidelines and performing VBAC, as 79.6% of the providers sampled (n=93) stated they *always* use practice guidelines and 57% of the providers reporting they perform VBAC. A weak, but significant correlation was noted ($r = 0.256$, $p = 0.014$). In this sample, use of clinical practice guidelines may compare to routinely screening patients as VBAC candidates also. Of the total (n=93) providers responding, 55 providers (60%) routinely screen their patients for VBAC and 57% perform VBAC. While this study provides a small sampling, the results reflect some interesting metropolitan area differences. In this sample, providers from the Las Vegas/Henderson area perform significantly less VBAC than providers in Salt Lake City, San Diego, Reno, and Tucson (See Table 3). Given the comparable number of 28 respondents in Salt Lake City, and 24 respondents in Las Vegas, in this sample, the proportion of difference is higher for Las Vegas/Henderson providers: only 25.5% of Las Vegas providers perform VBAC versus 86% of Salt Lake City providers who perform VBAC (Las Vegas-6; Salt Lake City-23; (p= .001). In this sample, Tucson and San Diego have a similar number of responding providers who answered "yes" to performing VBAC (15 in both cities), which is 40% and 49.5% respectively, more than Las Vegas providers. However, the student researcher also asked the question of how many hospitals each provider held staff privileges. In this sample (n=93), 68.8% (64) were on staff at more than one hospital; and 28% (26) were on staff at more than two hospitals.

This survey allowed for qualitative comments regarding why providers perform VBAC and why they do not. In this sample, responses explain some of the reasons providers do or do not perform VBAC (See Table 5).

Table 5: Most common reasons stated for performing VBAC or not, as stated on the survey

If you answered Yes to the VBAC question, please state why?	If you answered No to the VBAC question, please state why not?
"Recommended by ACOG guidelines; and proven by evidence-based practice (EBP)	Too time consuming; limited hospital coverage
Patient preference and a good risk to benefit ratio-1% uterine rupture risk	Unable to follow hospital requirements
Availability of 24-hour in-house anesthesia and OB coverage	Medical malpractice concerns
Less maternal and neonatal morbidity than a CS	No reimbursement for hospital wait time
Best option for many women with previous CS	On staff at too many hospitals"

In this discussion, among the reasons for performing VBAC or not performing VBAC, examining other factors that either promote facilitating using the ACOG-accepted guidelines or create barriers were analyzed: (a) group or solo practice, (b) routinely using clinical practice guidelines, (c) routinely screening patients as VBAC candidates, and (d) staff privileges at more than two hospitals by practice area. The student researcher also grouped residency programs attended by the sample participants, ranking residency programs in groups of over 5% in this sample. The residency program attended does not determine how or why providers practice as they do; but was simply a question that was asked on the survey. However, the table reflecting the differences

regarding routinely screening patients as VBAC candidates is remarkably similar to that of the table asking, "do you perform VBAC?"

Table 6: Providers by each practice area who routinely screen patients as VBAC candidates.

Do you routinely screen your patients as VBAC candidates?	Practice area				
	Tucson Area	Las Vegas/ Henderson Area	Salt Lake City Area	Reno/Sparks Area	San Diego Area
No	6	18	5	7	2
Yes	9	6	23	4	13
Total	15	24	28	11	15
Providers routinely screening	60.0%	25.0%	82.5%	36.5%	87.0%

N=93; (Likelihood Ratio [G-test] = 35.614, df 12, p=0.001)

Again, the Las Vegas/Henderson area has a statistically different number of providers who do not routinely screen patients as VBAC candidates as compared to providers in the other four cities surveyed. Another interesting comparison is the crosstab of provider participants (n=93) on staff at more than two hospitals listed by practice area (see Table 7). In this sample, a significantly proportional difference is observed for the Las Vegas/Henderson providers. Las Vegas/Henderson providers in this sample have a significantly higher number of providers who are on staff at more than two hospitals, which may influence their ability to perform VBAC, as per hospital regulations (see Appendix D).

Table 7: Practice Question: Are you on staff at more than 2 hospitals?

Are you on staff at more than 2 hospitals?	Practice region				
	Tucson Area	Las Vegas/ Henderson Area	Salt Lake City Area	Reno/Sparks Area	San Diego Area
No	14	9	23	10	11
Yes	1	15	5	1	4
Total	15	24	28	11	15

N=93; (Likelihood Ratio [G-test] = 24.850, p= .002)

The next logical question is: "how many of the Las Vegas/Henderson area providers are in solo practice"? In this sample, eight of the 24 providers (33%) in the Las Vegas/Henderson area are in solo practice and again, may influence their ability to perform VBAC.

Residency programs were grouped by frequency of attendance by state where the residency program is located and are over 5% of all programs listed in the survey (N=93):

- California residency programs = 17%, 18 provider attendees
- Arizona residency programs = 10.4%, 11 provider attendees
- Nevada residency programs = 10.4%, 11 provider attendees
- Utah residency programs = 8.5%, nine provider attendees
- Pennsylvania residency programs = 6.6%, seven provider attendees
- Colorado residency programs = 6.6%, seven provider attendees

It is clear that providers attending listed programs do not necessarily practice in the same region they completed their respective residency program, but it is interesting to compare variables, such as attendees (n=11) of Nevada residency programs routinely screening patients as VBAC candidates, using clinical practice guidelines, and performing VBAC.

Table 8: This table represents the 11 providers who attended Nevada residency programs and their responses to the question asking if they routinely screen patients as VBAC candidates?

Do you routinely screen your patients as VBAC candidates?	No	Yes
Residency in NV	8 (73%)	3 (27%)

Table 9: This table represents the 11 providers who attended Nevada residency programs and their responses to the question regarding using clinical practice guidelines in practice.

Do you use clinical practice guidelines in your practice?	Always	Sometimes
Residency in NV	10 (91%)	1 (9%)

Table 10: The table shows the number of providers (n=11) from Nevada residency programs that currently perform VBAC in their practice.

Do you perform VBAC?	No	Yes
Residency in NV	9 (82%)	2 (18%)

Study Limitations

The major limitations of this study include a small sampling of the provider population in each city, and this small sample may not accurately reflect the same proportions as a larger sample. One 'lesson learned' was that simultaneous online and mailed survey might solicit more provider responses. Privacy domains protect email provider addresses, and unless the researcher has access to a listserv, solicitation of online responses is difficult. A higher budget and research assistants would be beneficial during implementation for mailing surveys to increase provider response. As a group,

physicians who are incentivized provide in increased response rate. Data was only collected during a four to five month implementation period and may not be as generalizable as an data collection during an entire year. The short data collection period may bias findings in this study. The majority of provider participants in this study (30.1%) were from Salt Lake City. This percentage may also create a bias interfering with generalizable data analysis. No survey instrument reliability test was performed prior to implementation.

A future study with a larger sample may produce reasons to recommend practice changes if indicated. To gather information regarding the CS rate in each practice area, questions should be modified to maintain consistency for data analysis. Simply asking what each provider's CS rate is would assist the data analysis for area comparisons, although this same data is collected and analyzed yearly by the CDC and AHRQ per metropolitan area and state.

Another limitation to this survey is failure of delineating questions that specifically relate to nurse-midwifery practice: what midwifery programs the CNM attended, if they are board-certified, and how they interpret owning their practice. A future study to examine why nurse-midwives are not taking ownership of their practice to account for their own CS rate is recommended. Nurse midwives provide labor management through collaborative nursing and medical teams. Taking ownership of CNM practice is particularly interesting and important as movement toward the doctor of nursing practice (DNP), as the terminal degree for clinical practice becomes the standard in advanced practice nursing education and practice.

Although not viewed as a limitation, a slight percentage of participants are current OB/GYN residents, not currently board-certified, and yet participate in CS and VBAC through their residency program, use practice protocols, and are important to this study.

Dissemination and Utilization of Results

Dissemination of results will begin by emailing the results to the providers who have asked for the results from the five cities. Locally, in Las Vegas, dissemination of results will include obstetric physicians, obstetric nurses, and perinatal providers at the various hospitals in the Las Vegas valley. Besides publication in well-known perinatal professional journals, public dissemination of results at ob/gyn professional groups through poster presentation or oral presentation is strongly considered. It is the student investigator's plan to publish the data from this study in a peer-reviewed journal. The possible journals for dissemination of this study's results include *Journal of Obstetrics and Gynecology, Contemporary OB/GYN,* and *Journal of Nurse-Midwifery.* The dissemination of results will provide hopefully a means of self-reflection in provider practices as to whether using clinical practice guidelines would change individual practice as an OB provider.

Conclusion

The specific aim of this project was to examine provider practices related to CS and VBAC in Southern Nevada and to compare provided practices to those of practitioners in surrounding regions. Familiarity with evidence-based practice through a literature search provided knowledge of recent, widely accepted practice guidelines to reduce the CS rate by increasing the rate of VBAC. The literature search also showed CS delivery to be an over-used procedure as determined by in-hospital quality indicators

(AHRQ, 2007). The data analysis of this capstone revealed proportional differences regarding provider practices in the Las Vegas/Henderson area. Viewing CS delivery through an epidemiological theory, providers must reflect how their individual practice affects delivery of care in communities and contributes to the costs and morbidity of health care as almost one-third of newborn deliveries are CS deliveries; with Nevada at number 16 of 50 in CS delivery rate (CDC, 2010). The implications to practice are that physicians become conscientious of clinical practice guidelines, and nurse-midwives increase their ability to practice in a model of health promotion and disease prevention to decrease the CS rate.

Appendix A: Provider/Physician Internet Survey

VBAC

1. VBAC Survey

My name is Rita Marrero and I am a Doctor of Nursing Practice (DNP) student working on my capstone project at the University of Nevada, Las Vegas. I need your assistance in completing my capstone project by taking part in a short survey.

Purpose of the Study: You are invited to participate in a research study to determine regional differences in VBAC rates.

Participants:
You are being asked to participate in the study if you meet the inclusion criteria below:
1) You are a provider who provides prenatal care.
2) You are a provider who performs newborn deliveries in a hospital.
3) You are a provider who either performs or assists with CS deliveries.

Procedures:
If you volunteer to participate in this study, you will be asked to complete a few demographic questions and the VBAC survey.

Benefits of Participation:
There may be no direct benefits to you as a participant in this study. However, we hope to determine the psychometric properties of the FPSRLS and is this instrument is validated, it will be submitted for publication and therefore dissemination for other nursing educator's use.

Risks of Participation:
There are risks involved in all research studies, but this study may include only minimal risks in that you may feel uncomfortable or stressed in answering some of the questions.

Cost/Compensation:
The study will take approximately 10-15 minutes of your time. There is no financial cost to you to participate in this study. You will not be compensated for your time.

Contact Information:
If you have any questions or concerns about the study, you may contact Mary Bondmass at Mary.bondmass@unlv.edu or 702-895-3418 (PI and Faculty Capstone Chair). For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity-Human Subjects at 702-895-2794 or toll free at 877-895-2794 or via email at IRB@unlv.edu.

Voluntary Participation:
Your participation in this study is voluntary. You may refuse to participate in this study at all or you have the ability to skip answers on the survey and/or submit the survey without requiring an answer on each item. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality:
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. The Internet Protocol address used to contact you will not be collected. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time has expired, the information gathered will be destroyed.

This study has been approved by our University's Institutional Review Board.

Participant Consent:
If you have read the above information and you meet the inclusion criteria and you wish to participate in this study, please proceed by clicking the Next icon at the bottom center of the screen.

Page 1

VBAC

1. Please indicate your gender

- [ ] Female
- [ ] Male

2. Please enter your age in years

3. How many years have you been practicing?
(please enter a number of years versus text)

4. What type of practice are you in?

- [ ] Solo practitioner
- [ ] Group practice

5. Are you on staff at more than one hospital?

- [ ] Yes
- [ ] No

6. Are you on staff at more than 2 hospitals?

- [ ] Yes
- [ ] No

7. Please indicate the region in which you primarily practice.

- [ ] Las Vegas/Henderson Area
- [ ] Reno/Sparks Area
- [ ] Salt Lake City Area
- [ ] San Diego Area
- [ ] Tucson Area

Page 2

VBAC

8. Please indicate which type of license you hold?

- MD
- DO
- CNM
- PA
- FNP

9. Where did you do your OB/GYN residency?
(please spell out the name of the institution and it's location)

10. Are you currently an ACOG member?

- Yes
- No

11. Were you ever an ACOG member?

- Yes I was at some time in the past
- No I was never a member
- I am currently a member
- Does not apply to me

12. Were you ever an ACNM member?

- Yes I was at some time in the past
- No I was never a member
- I am currently a member
- Does not apply to me

13. Are you Board certified?

- I am currently Board certified
- I am not currently Board certified, but I was in the past
- I have never been board certified

Other (please specify)

VBAC

14. Please estimate how many Cesarean Sections (CS) you performed in the last month per deliveries
i.e. 2 CS per 15 births

Feel free to add any comments

15. Please estimate how many REPEAT Cesarean Sections (CS) you performed in the last month per deliveries
i.e. 2 REPEAT CS per 15 births

Feel free to add any comments

16. Please estimate how many Cesarean Sections (CS) you performed in the last six months per deliveries
i.e. 10 CS per 150 births

Feel free to add any comments

17. Please estimate how many REPEAT Cesarean Sections (CS) you performed in the last six months per deliveries
i.e. 10 REPEAT CS per 150 births

Feel free to add any comments

VBAC

18. Please estimate how many Cesarean Sections (CS) you performed in the last 12 months per deliveries
i.e. 15 CS per 200 births

Feel free to add any comments

19. Please estimate how many REPEAT Cesarean Sections (CS) you performed in the last 12 months per deliveries
i.e. 15 REPEAT CS per 200 births

Feel free to add any comments

20. Do you perform vaginal births after Cesarean (VBAC)?

- ☐ Yes
- ☐ No

21. If you answered Yes to the VBAC question, please indicate why?

22. If you answered No to the VBAC question, please indicate why you do not perform VBAC?

VBAC

23. Do you routinly screen your patients as VBAC candidates?

- ☐ Yes
- ☐ No
- ☐ Does not apply to me

24. Do you use clinical practice guidelines in your practice?

- ☐ Always
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

The American College of Obstetricians & Gynecologists

Women's Health Care Physicians

Practice Bulletin

Number 115, August 2010

Clinical Management Guidelines for OB/GYN

Vaginal Birth After Previous Cesarean Delivery

Trial of labor after previous Cesarean delivery (TOLAC) provides women who desire a vaginal delivery with the possibility of achieving that goal—a vaginal birth after Cesarean delivery (VBAC). In addition to fulfilling a patient's preference for vaginal delivery, at an individual level VBAC is associated with decreased maternal morbidity and a decreased risk of complications in future pregnancies. At a population level, VBAC also is associated with a decrease in the overall cesarean delivery rate. Although TOLAC is appropriate for many women with a history of a Cesarean delivery, several factors increase the likelihood of a failed trial of labor, which compared with VBAC, is associated with increased maternal and perinatal morbidity. Assessment of individual risks and the likelihood of VBAC are, therefore, important in determining who are appropriate candidates for TOLAC. The purpose of this document is to review the risks and benefits of TOLAC in various clinical situations and provide practical guidelines for managing and counseling patients who will give birth after a previous cesarean delivery.

Who are candidates for a trial of labor after previous cesarean delivery?

Good candidates for planned TOLAC are those women in whom the balance of risks (low as possible) and chances of success (as high as possible) are acceptable to the patient and health care provider. The balance of risks and benefits appropriate for one patient may seem unacceptable for another. Because delivery decisions made during the first pregnancy after a Cesarean delivery will likely affect plans in future pregnancies, decisions regarding TOLAC should ideally consider the possibility of future pregnancies.

Although there is no universally agreed on discriminatory point, evidence suggests that women with at least a 60–70% chance of VBAC have equal or less maternal morbidity when they undergo TOLAC than women undergoing elective repeat Cesarean. Conversely, women who have a lower than 60% probability of VBAC have a greater chance of morbidity than woman undergoing repeat Cesarean delivery. Similarly, because neonatal morbidity is higher in the setting of a failed TOLAC than in VBAC, women with higher chances of achieving VBAC have lower risks of neonatal morbidity. One study demonstrated that composite neonatal morbidity is similar between TOLAC and elective repeat Cesarean delivery for the women with the greatest probability of achieving VBAC.

The preponderance of evidence suggests that most women with one previous Cesarean delivery with a low transverse incision are candidates for and should be counseled about VBAC and offered TOLAC. Conversely, those at high risk for complications (eg, those with previous classical or T-incision, prior uterine rupture, or extensive transfundal uterine surgery) and those in whom vaginal delivery is otherwise contraindicated are not generally candidates for planned TOLAC. Individual

circumstances must be considered in all cases, and if, for example, a patient who may not otherwise be a candidate for TOLAC presents in advanced labor, the patient and her health care providers may judge it best to proceed with TOLAC.

Selected Clinical Factors Associated with Trial of Labor After Previous Cesarean Delivery Success

Increased Probability of Success (Strong predictors)

- Prior vaginal birth
- Spontaneous labor

Decreased Probability of Success (Other predictors)

- Recurrent indication for initial cesarean delivery (labor dystocia)
- Increased maternal age
- Non-white ethnicity
- Gestational age greater than 40 weeks
- Maternal obesity
- Preeclampsia
- Short inter-pregnancy interval
- Increased neonatal birth weight

Summary of Recommendations

The following recommendations are based on good and consistent scientific evidence (Level A):

Most women with one previous Cesarean delivery with a low-transverse incision are candidates for and should be counseled about VBAC and offered TOLAC. Epidural analgesia for

labor may be used as part of TOLAC. Misoprostol should not be used for third trimester cervical ripening or labor induction in patients who have had a cesarean delivery or major uterine surgery.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

Women with two previous low transverse Cesarean deliveries may be considered candidates for TOLAC. Women with one previous Cesarean delivery with a low transverse incision, who are otherwise appropriate candidates for twin vaginal delivery, may be considered candidates for TOLAC. External cephalic version for breech presentation is not contraindicated in women with a prior low transverse uterine incision who are at low risk for adverse maternal or neonatal outcomes from external cephalic version and TOLAC. Those at high risk for complications (e.g., those with previous classical or T-incision, prior uterine rupture, or extensive transfundal uterine surgery) and those in whom vaginal delivery is otherwise contraindicated (e.g., those with placenta previa) are not generally candidates for planned TOLAC. Induction of labor for maternal or fetal indications remains an option in women undergoing TOLAC. TOLAC is not contraindicated for women with previous Cesarean delivery with an unknown uterine scar type unless there is a high clinical suspicion of a previous classical uterine incision.

The following recommendations are based primarily on consensus and expert opinion (Level C):

A trial of labor after previous Cesarean delivery should be undertaken at facilities capable of emergency deliveries. Because of the risks associated with TOLAC and that uterine rupture and other complications may be unpredictable, the College recommends

that TOLAC be undertaken in facilities with staff immediately available to provide emergency care. When resources for immediate Cesarean delivery are not available, the College recommends that health care providers and patients considering TOLAC discuss the hospital's resources and availability of obstetric, pediatric, anesthetic, and operating room staffs. Respect for patient autonomy supports that patients should be allowed to accept increased levels of risk, however, patients should be clearly informed of such potential increase in risk and management alternatives. After counseling, the ultimate decision to undergo TOLAC or a repeat Cesarean delivery should be made by the patient in consultation with her health care provider. The potential risks and benefits of both TOLAC and elective repeat Cesarean delivery should be discussed. Documentation of counseling and the management plan should be included in the medical record.

Proposed Performance Measure

Percentage of women who are candidates for TOLAC with whom discussion of the risk and benefits of TOLAC compared with a repeat Cesarean delivery has been documented in the medical record.

Source: Excerpts from the American College of Obstetricians and Gynecologists (2010). *Practice Bulletin, Number 115.*

Appendix C: ACOG Assessment of Management Tool

Vaginal Birth After Cesarean Delivery (VBAC) **December 2007**

Physician (or CNM) #_____MR # _____ VRQC Reviewer _____

Rating (check one)
- ❒ Satisfactory (No Deficiencies)
- ❒ Unsatisfactory Documentation
- ❒ Unsatisfactory Management
- ❒ Unsatisfactory Documentation and Management

Synopsis of case:
Patient age: _____
Gravidity/parity: _____
Gestational age:_____
Infant Weight: _____
Apgar scores: _____

Mode of Delivery:_____

Directions: Check-off each criterion that is met. For unchecked criterion, mark the unshaded Deficiency Rating Box adjacent to the criterion on the right. Then check-off the final rating at the top of the page. Any marked Deficiency Rating Box results in an unsatisfactory chart rating for management, documentation, or both.	**Deficiency Rating Box** UD	UM	**Comments Relating to an Unsatisfactory Rating** A summary description statement is required for every marked deficiency. Cite to numbered items (i.e., 1a, 1b). May use back of sheet if necessary.
1. Assessment of Management a. Appropriate candidate for trial of labor (**all must be checked**): ❑One previous low-transverse cesarean delivery **or** two previous cesarean deliveries with a successful vaginal birth ❑Clinically adequate pelvis based on clinical pelvimetry or prior vaginal birth ❑No other uterine scars or previous rupture ❑Physician immediately available throughout active labor capable of monitoring labor and performing an emergency cesarean delivery ❑Immediate availability of anesthesia and personnel for emergency cesarean delivery			
b. Contraindications for VBAC (**if any are checked, then UM**) ❑Previous classical or T-shaped uterine incision or extensive transfundal uterine surgery ❑Previous uterine rupture ❑Medical or obstetric complication that precludes vaginal delivery ❑Inability to perform emergency cesarean delivery because of unavailable surgeon, anesthesia, sufficient staff, or facility ❑Two prior uterine scars and no vaginal deliveries			
c. Prostaglandins (**if checked, then UM**) ❑ Any use of prostaglandins for cervical ripening or induction of labor			
2. Assessment of Documentation ❑ a. Adequate and timely informed consent, including discussion of risks and benefits, and alternatives with patient			
❑ b. Management decisions properly documented			
❑ c. Properly documented labor and delivery summary			
Additional Comments. Refer to numbered items above (e.g., 1a, 1b). May use back of sheet if necessary.			

Source: American College of Obstetricians & Gynecologists [ACOG], (2007).

Appendix D: UMC VBAC Policy

File. . . Options. . . Navigate. . . Read Mode

UMC UNIVERSITY MEDICAL CENTER THE SYMBOL OF EXCELLENCE	Maternal Child Services LABOR AND DELIVERY / HIGH RISK OB	
	Policy Name:	Vaginal Birth After Cesarean Section
	Start Date:	10/15/2008
	Approval Date:	10/15/2008
	Approved by:	Vicki Huber

Header Information

Document Type: Policy

Policy		Deployment	
Policy Name:	Vaginal Birth After Cesarean Section	Institution:	UNIVERSITY MEDICAL CENTER
Supercedes:		Division:	NURSING
Level:	Critical	Department:	Maternal Child Services
Owner(s):	Kathryn Hughes/UMC	Contributing Departments:	
Priority:		Manual Name:	LABOR AND DELIVERY / HIGH RISK OB
Identification Number:		Manual Category / Chapter:	
Status:	4. Approved	Restricted to Groups:	
Approval Date:	10/15/2008	Start Date:	10/15/2008
Version Number:	1	Monthly Review Interval:	36
		Review Date:	10/15/2011

Document Body

PURPOSE: To provide expectant mothers the option of vaginal birth after caesarean section.

POLICY:

Every effort shall be made to obtain previous health history, prior to decision-making. Prior successful Vaginal Births following C/Sections, will be taken into consideration when decision-making.
The provider shall discuss the risks and benefits of a trial of labor versus repeat caesarean section with the patient. No patient will be mandated to undergo a trial of labor.

CONTRAINDICATIONS:

- Absolute cephalopelvic disproportion
- Previous classical uterine incision
- Undocumented uterine scar
- Estimated fetal weight greater than 4000 grams
- Abnormal presentation
- Prostaglandins should not be used for induction/augmentation of labor in patients who have had previous uterine surgery. Per ACOG 2007 Compendium, the use of prostaglandins increases the incidence of uterine rupture.

USE WITH CAUTION:

Oxytocin may be used with caution for induction and/or augmentation of labor in selected patients whose previous caesarean was one with a low transverse delivery. Criteria for limitations on dosing are ordered by the physician. (See policy Oxytocin, Intravenous for Induction or Augmentation of labor).

PROCEDURE:

PROCEDURE:

The nursing staff will assist with patient education regarding vaginal birth after caesarean (VBAC).

- The physician will notify the labor and delivery RN and orders will be given at that time. In the event the patient presents herself to labor and delivery, the nurse will notify the physician.
- **The physician will be immediately available (in hospital) for all VBAC patients**.
- The labor and delivery charge nurse is notified of the patient's arrival and the possibility of a repeat caesarean delivery.
- For resident cases, the attending is to be called first for any problems with labor or fetal heart rate pattern. As soon as the attending has been notified, call the resident also.
- Obtain consents for "caesarean section" and " vaginal delivery after caesarean section".
- A nursery nurse will attend the birth by caesarean delivery and may be present during the vaginal delivery per the neonatal resuscitation policy's criteria.
- All patients shall be placed in a labor room located on the labor and delivery unit with emergency equipment in the room. Labor room placement is near the operating suites.
- Patient shall be continuously monitored during labor using electronic fetal monitoring equipment.
- Intrauterine monitoring is available per physician order.
- Maternal Pulse will be continuously monitored via pulse oximetry during the labor and delivery.
- In the presence of any significant change in the fetal heart rate baseline, the patient is to be moved to the operating suite and remain there until delivery. A double set up will be in place in the operating room unless the decision has been made to proceed with a caesarean section.
- No forceps are to be used for vaginal deliveries in the LDR rooms for this group of patients. The patient must be in the OR suite with a double set up in place prior to the use of forceps.
- Vacuum deliveries can only be used for maternal assistance. A vacuum should not be used if uterine rupture is suspected. No vacuum deliveries are to be done in the LDR rooms for this group of patients.

Source: University Medical Center of Southern Nevada (2008). *Vaginal birth after Cesarean section.* Hospital Policy. Used with permission.

APPENDIX E: IRB EXEMPT NOTICE

My name is Rita Marrero and I am a Doctor of Nursing Practice (DNP) student working on my capstone project at the University of Nevada, Las Vegas. I need your assistance in completing my capstone project by taking part in a short survey.

Purpose of the Study: You are invited to participate in a research study to determine provider differences in VBAC rates.

Participants:
You are being asked to participate in the study if you meet the inclusion criteria below:
1) You are a provider who provides prenatal care.
2) You are a provider who performs newborn deliveries in a hospital.
3) You are a provider who either performs or assists with CS deliveries.

Procedures:
If you volunteer to participate in this study, you will be asked to complete a few demographic questions and the VBAC survey.

Benefits of Participation:
There may be no direct benefits to you as a participant in this study. However, we hope to determine the psychometric properties of the FPSRLS and is this instrument is validated, it will be submitted for publication and therefore dissemination for other nursing educator's use.

Risks of Participation:
There are risks involved in all research studies, but this study may include only minimal risks in that you may feel uncomfortable or stressed in answering some of the questions.

Cost/Compensation:
The study will take approximately 10-15 minutes of your time. There is no financial cost to you to participate in this study. You will not be compensated for your time.

Contact Information:
If you have any questions or concerns about the study, you may contact Mary Bondmass at Mary.bondmass@univ.edu or 702-895-3418 (PI and Faculty Capstone Chair). For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity-Human Subjects at 702-895-2794 or toll free at 877-895-2794 or via email at IRB@unlv.edu

Voluntary Participation:
Your participation in this study is voluntary. You may refuse to participate in this study at all or you have the ability to skip answers on the survey and/or submit the survey without requiring an answer on each item. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality:
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. The Internet Protocol address used to contact you will not be collected. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time has expired, the information gathered will be destroyed.

This study has been approved by our University's Institutional Review Board.

Participant Consent:
If you have read the above information and you meet the inclusion criteria and you wish to participate in this study, please proceed by clicking the *Next* icon at the bottom center of the screen.

Deemed exempt by the OHRP and/or the UNLV IRB. Protocol #1104-3758M
Exempt Date: 04-22-11

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Associate Arts in Nursing (R.N.)

8/1979 – 11/1980 University of Mississippi Medical Center
Nurse-Midwifery Education Program
Jackson, Mississippi
Certificate Nurse-Midwifery (C.N.M.)

1/1989 – 6/1995 University of Nevada, Las Vegas
Las Vegas, Nevada
Health Care Administration

2/2007-7/2009 University of Phoenix
Phoenix, Arizona
Bachelor of Science in Nursing (B.S.N.)
Graduated Summa cum Laude

8/2009 – 8/2010 University of Phoenix
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Master of Science in Nursing (M.S.N.)
Nurse Practitioner/Fast Track
Graduated Summa cum Laude

8/2010 – 4/2012 University of Nevada, Las Vegas
Graduate College School of Nursing
Doctor of Nursing Practice (D.N.P.)

BOARD CERTIFICATION:

1981- Current American Midwifery Certification Board
(American College of Nurse-Midwives)

LICENSURE AND CERTIFICATION:

1974 - Current	Registered Nurse-RN- Nevada #6718
1981 - Current	Advanced Practitioner of Nursing (Certified Nurse-Midwife (CNM) – Nevada #0054
1981 - Current	Diplomate of the American College of Nurse-Midwives – National #3718
1986 – Current	Nevada State Board of Pharmacy-Prescription License
2003 – Current	Drug Enforcement Administration-Controlled Substance License

ACADEMIC POSITIONS:

1993 - Current Adjunct Faculty Graduate College School of Nursing
The Frontier School of Midwifery and Family Nursing-Clinical Preceptor
Hyden, Kentucky

2011 - Current Adjunct Faculty Graduate College School of Nursing
University of Cinncinnati
Cinncinnati, Ohio

1988 - Current Adjunct Faculty Nursing Department
College of Southern Nevada
North Las Vegas, Nevada

2000-Current Adjunct Faculty of Department of Medicine
Touro University School of Medicine
Clinical Preceptor
San Francisco, California

PRESENT HOSPITAL AFFILIATIONS

3/2010 – Current University Medical Center of Southern Nevada
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Allied Health Professional Staff
Department of OB/GYN

4/2011 – Current MountainView Hospital
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Allied Health Professional Staff
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FORMER HOSPITAL AFFILIATIONS:

4/1993 – 1/2010 North Vista Hospital
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2001 – 2006 University Medical Center of Southern Nevada
Las Vegas, Nevada
Allied Health Professional Staff; Department of OB/GYN

1981 - 1986 University Medical Center of Southern Nevada
Las Vegas, Nevada
Allied Health Professional Staff; Department of OB/GYN

1981 - 1986 Womens Hospital
Las Vegas, Nevada
Allied Health Professional Staff; Department of OB/GYN

ACADEMIC COMMITTEES:

1985 - 1986 Perinatal Morbidity & Mortality Committee
Womens Hospital
Las Vegas, Nevada

PROFESSIONAL ORGANIZATIONS:

2009 – Current Honor Society of Nursing
Sigma Theta Tau International
Omicron Delta Chapter

1974 - Current Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN)

1980 - Current American College of Nurse-Midwives (ACNM)

1985 - 1989 Chairman- Nevada Chapter
American College of Nurse-Midwives

1985 - Current American Nurses Association (ANA)

1985 - Current Nevada Nurses Association (NNA)

CLINICAL ACTIVITIES:

1970 - 1974 Staff Nurse- Labor & Delivery
St. Francis Hospital
Blue Island, Illinois

1974 - 1975 Staff Nurse- Post Partum
Women's Hospital
Las Vegas, Nevada

1975 - 1976 Staff Nurse- Labor & Delivery
Sunrise Hospital
Las Vegas, Nevada

1976 - 1979 Charge Nurse- Labor & Delivery
Women's Hospital
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1979 Staff Nurse- Labor & Delivery
University Medical Center of Southern Nevada
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1981 - 1983 Staff Nurse-Midwife (CNM)
Edward A. Sherwood, MD.
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1983 - 1985 Staff Nurse-Midwife (CNM)
Birthplace- Women's Care Center
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1985 - 1999 President & Clinical Administrator
Nurse-Midwife (CNM)
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