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Misconceptions surrounding the safety of home birth and hospital birth

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MISCONCEPTIONS SURROUNDING
THE SAFETY OF HOME BIRTH
AND HOSPITAL BIRTH

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Science

in

The School of Veterinary Medical Science
through the
Interdepartmental Program in
Pathobiological Sciences

By
Misty Dawn Richard
B.S., Louisiana State University, 1999
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Dedication

This work is dedicated to the midwives
Sherri Daigle, Anne LaStrapes, and Shelley New
for giving me the pleasure of working with you

and to Emmy Trammell and Pauline Lerma
for letting me experience
the joy of a home birth

I will forever be indebted to your kindness and generosity
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Abstract

Much debate surrounds the topic of women choosing to deliver their infants at home with the services of a midwife. The outcomes of women beginning labor at home, ultimately delivering at home, and the infants born at home were studied in order to determine the safety of home birth among expectant women choosing to be attended by a midwife licensed to practice by the state of Louisiana. Trends associated with those choosing home birth and the frequency of home birth were also analyzed. The study was conducted using retrospective records of clients accepted during the study years 1986-2000.

During the study years, the midwives began care on 284 women. Of those women, 225 delivered at home, 31 were transported to the hospital at some point, 7 voluntarily left the midwife’s care, and 20 were referred out for various reasons. The only cause of infant mortality in the home births was congenital anomalies. There were no maternal deaths or significant maternal morbidity. The years with the largest number of home births were 1997, 1998, and 1999 with 32, 35, and 32 births respectively. During these three years there were three actively practicing midwives, with a fourth serving only six women total. The same three midwives were also practicing in 2000, but the number of home births dropped sharply to 20 due to difficulties attaining physician back-up. Most women who chose home birth had already had a child. Only 20.8% were primiparous. Complications and obstetric procedures were infrequent, outcomes were good, and the breastfeeding rate was 100% with most babies being nursed within one hour of birth. The cesarean section rate for all women who began labor with the intention of delivering at home was 6.2%, much lower than the national cesarean rate which
averages 22%. Comparisons were also made to vital statistics data available for East Baton Rouge Parish and national records.

Home birth attended by a licensed midwife is safe and has outcomes as good as or better than that of hospital birth. Home birth with a trained midwife should be an option available to low-risk women.
Introduction

The birth of a child is an experience that most men and women in the United States will go through. It is a joyous occasion; however, it can also be a point in one’s life where they are overwhelmed with information and many things to do. Not only are expectant parents having to get their house ready and having to learn numerous things about pregnancy and new baby care, they also must become informed about the endless array of tests, medical procedures, and standards of practice commonly used in the field of obstetrics today. Many do not have the time to learn about all of the tests, procedures, and interventions; rather they trust their care provider’s opinion or what friends or family members who have already had children tell them.

Most of these expectant parents do not consider delivery outside of a hospital for several reasons, some being perceived safety, hospital birth being the standard, or not knowing that there was another option. Subsequently, most expectant parents do not challenge or question anything obstetricians or the hospital staff tells them is best for their baby. Many do not challenge or questions the use of tests, procedures, and other interventions because these practices have become so common and accepted today that their use is expected and their safety is rarely challenged. Many women who choose to have a hospital birth expect to have an IV, electronic fetal monitoring, and an epidural because the use of these procedures has become so common and standard that their safety is automatically assumed. But just become something is widely used and accepted does not mean that it is safe. To best illustrate this point think back to when prophylactic forceps deliveries were common and therefore assumed safe. It took decades before the obstetric community finally agreed that prophylactic forceps deliveries were not in the
best interest of mothers and babies. But what about the procedures and interventions used today: are they safe? Numerous misconceptions about the safety of procedures using in hospital birth today exist and many of them will be discussed in this work.

In today’s society, when couples proclaim that they are choosing a home birth in order to avoid these ever so common medical procedures and interventions, the majority of people are defensive in their proclaiming that hospital birth is the safest option for childbirth. However, the women choosing home birth are usually well educated about the birth process and have made an evidence-based decision to deliver their child at home. Avoidance of common hospital procedures is a common reason that women choose home birth and it is not likely to be the only reason. Numerous studies have shown that home birth with an adequately trained attendant can be as safe as hospital birth. Unfortunately the word has not gotten out to the masses. Women who want information on home birth can’t simply ask their obstetrician about it because the vast majority of obstetricians will simply tell her that delivery outside of the hospital is too dangerous. Rather she must search the internet or call several people just to get in touch with one person who can provide some information. And then depending upon which state she lives in, the journey can be even more difficult or it may be virtually impossible. But to those who do overcome the barriers and have a home birth, they can feel safe knowing that many studies have shown that birth outcomes will be at least as good as those of hospital birth (and sometimes better). The misconception about the “dangers” of home birth will also be addressed in this work.

The study to be reported on in this document includes the outcomes of home birth attended by a midwife licensed to practice by the state of Louisiana during the years
1986-2000. Vital statistics records for hospital births of low-risk mothers residing in East Baton Rouge parish were used as a reference group. Expected results from the study are that the outcomes for both mother and baby will be at least as good as those of babies born in the hospital, at both the local and national level. I also expect to have results which will agree with other studies conducted on the topic of the safety of home birth, and conclude with them that home birth with an adequately trained midwife is as safe as those occurring in the hospital and is accompanied by fewer procedures and interventions.
Chapter 1. Obstetricians, Midwives, and the Use of Evidence-Based Practice

1.1 Introduction

For the vast majority of history, childbirth has been a “woman’s thing” and was attended by midwives at home. The word midwife itself means with the woman. Men were not allowed in the birth chamber and thus were excluded from witnessing this uniquely female act. This way of practice remained unchanged for most of history as we know it. Men did begin making their way into childbirth; however, and within a short period of time, surgeon and physician guilds were formed, “tools” for childbirth were developed, and men pushed birth into the hospitals and out of the control of women—both the midwife and the mother herself.

Men’s participation in childbirth began occurring when medicine as we know it today became a field of science and the body began to be viewed as a machine; doctors were there to fix what was wrong. Along with this was the reason of efficiency, an ever so valued part of medicine, and it was not efficient for doctors to travel to a woman’s house and sit for hours waiting for her to deliver. There was also the need to increase income, teach students, and conduct research, and the only way to accomplish all of these goals was to bring the patients together—in hospitals (Brackbill et al. 1984). The change from home to hospital birth was physician driven, not patient driven.

Until the 1940’s childbirth was considered dangerous whether women delivered in a hospital or not, and in some cases the dangers were greater if the woman was in the hospital. Infection was the leading cause of death until antibiotics were developed and infection control measures were implemented. And now, the hospital is even more dangerous for laboring and delivering women because hospitals are a major source of
infection, and even more so now with the life-threatening antibiotic-resistant bacteria becoming more common in number and multiple antibiotic-resistance.

This first chapter will address the shift from midwife to obstetrician care, home to hospital deliveries, the initial tragedies associated with the entrance of men and their interventions, the current debate of newer technological advances in childbirth and the evidence found while studying their effectiveness. Evidence-based practice should be the ultimate goal of anyone involved in childbirth and all other areas of medicine. However, as I will show in this first chapter, the obstetricians are not following their evidence and the midwives are. Archie Cochrane of the Cochrane Data Base credits obstetrics as being the least scientific of all medical specialties because of the field’s approach of accepting tradition over scientific evidence. Evidence will show that many current obstetric practices are not scientifically based and that home births attended by properly trained midwives can be just as safe as and as found in some studies, safer than hospital births. Other relevant topics to be addressed which relate to the lack of use of evidence-based practice are the current increase in maternal deaths, a standstill in the decline of infant mortality and cerebral palsy, incomplete informed consent, emotional and psychological aspects of childbearing, money and lobbying interests, fetal rights, fear of litigation, and racial disparity. Comparisons will be made to other countries with maternal and infant outcomes better than that of the United States and possible reasons for the disparities.

1.2 Men Replace Midwives: History Through the 19th Century

The first men to enter the birth chamber were not doctors; they were the barber-surgeons who were, as their name says, hair cutters and beard shavers; however, they also had skills which included using their knives and other “tools” for bloodletting and
extracting dead babies (Blumenfeld-Kosinski 1990). The midwives were excluded from using any kind of “tool” or instrument, whether it is a knife or other instruments such as hooks or a cranioclast, and later the forceps. When it became obvious to the midwife that the mother was going to die because she couldn’t deliver the child or if the birth was particularly difficult, the barber-surgeons were called in to attempt to save a life. These first doctors would use their “tools” to take the baby out of the woman’s body in pieces: the cranioclast would crush open the baby’s skull, the crochets would dismember it and remove it in pieces. Shortly after came the first cesarean sections--if the mother was dying and the child would die with the mother, the midwives would call in the men to perform a cesarean section to attempt to remove a live child so that it could be properly baptized. No mothers survived cesareans before current technology existed and very few babies lived more than a day or two. The first “doctors” involved in childbirth were only there to end one life in the attempt to save another. Midwives were not allowed to use these tools because as the field of medicine made it’s entrance, the surgeons and doctors required that midwives attend only normal deliveries and that a doctor, thus a man, be called in for the surgeries. There was no formal training and surgeons were self-named. A Guild of Surgeons formed in England in 1540 had a statute that specifically stated, “no carpenter, smith, weaver, or woman shall practice surgery”(Mitford 1992).

As the science of medicine grew, surgeons’ involvement in childbirth expanded beyond just removing a child in one of the unnatural ways described above. In 1588, Peter Chamberlen developed forceps which were considered magnificent instruments to help the mother get the child out, with both mother and child surviving. Forceps became the method of delivery for the wealthy. In theory, the Chamberlen brothers traveled
around England and charged outrageous fees, which of course, must be paid in advance and because of the advance payment issue, no one knew if they would actually be necessary for the delivery or not; however, they were used regardless of indication. The forceps were carried with them to each birth in a carved and locked casket. They felt this secret should be kept to themselves because of power and money—if someone else acquired a pair they would no longer be able to charge outrageous fees and would not be as highly respected. And it is important to note that the Chamberlen brothers required that everyone, including the midwife, leave the birth chamber before their precious forceps were taken out of the locked casket and supposedly used to extract the baby from the blindfolded mother (Mitford 1992). This was the first time in history that midwives were forced to leave the birth chamber and not one woman was present at the forceps delivery of the child.

Even with the introduction of early surgeons in the birth chamber, childbirth was still dominated by women and was considered a social event. In America (and other countries) during the colonial period, laboring women were attended by a group of women. The group usually included a midwife, the laboring woman’s mother, aunts and other older women who had survived childbirth. The women would travel to the woman’s house when they were told she was in labor, assist with the delivery, and stay for several weeks after to assist the mother with housekeeping and childcare during the lying-in period. Lying-in and childbirth during the period was a social event, not a medical event. Men were only called in when needed to extract a baby in an attempt to save the mother’s life, or in even rarer cases, to perform a cesarean section. Towards the end of the eighteenth century, as Americans began going overseas for medical school,
men began attending normal deliveries. The first men to attend normal deliveries called
themselves man-midwives and continued to call the practice of childbirth midwifery.

Midwifery was the first field of medicine taught in the medical schools and there
was no standard curriculum; therefore, many of the new doctors were inadequately
trained, but even with their inadequate training, they managed to convince many that they
were superior to midwives and made their way into the birth chamber. At the time,
medical school training did not include clinical training and the vast majority of new
doctors had not witnessed one solitary delivery when they attended their first paying
patient and because of this most of the early doctors did more harm than good (Wertz and
Wertz 1989).

In many of the first deliveries by the new doctors, the women assistants in the
birth chamber would tell the doctor what was happening and what to do, but it insulted
many man-midwives and some instructed women to leave the birth chamber so that they
could do their work without the supervision of experienced and judging eyes. This led to
many more difficult and painful deliveries for women as well as too many man-midwives
resorting too quickly to crochets and cranioclasts to remove a baby they felt was too large
to pass through the mother’s pelvis. The midwives were not supportive of the new man-
midwives and some of the bolder ones talked publicly about the man-midwives having
more forced labors, extractions, deaths, and forceps deliveries than needed. But the
American midwives never organized themselves like the doctors or the European
midwives and they began to lose patients. Ironically, in England and France, where
many of the American man-midwives went to learn their trade, the man-midwives did not
manage to convince the public that they were superior to midwives and because of this,
the midwives in England and France were not pushed to extinction like they were here in America. And in France, the midwives trained the doctors in normal deliveries (Wertz and Wertz 1989).

Lack of clinical training in the newer American medical schools continued until the time of the Civil War because of the concern of maintaining women’s modesty by not having men viewing women’s genitals. The topic was never discussed when midwives were the birth attendants. When clinical training was introduced in medical schools after the Civil War, the poor women who could not afford to hire birth attendants were the ones exposed and practiced upon, not the “more respectable” higher class women. The post Civil War maternity hospitals allowed new doctors to learn their skills on poor women in hospitals so that they could take these skills and use them when delivering respectable women in their homes. Hospital birth was for the poor or destitute women during this time period (Wertz and Wertz 1989).

In the mid 1800’s to the early 1900’s, controlling pain during delivery and puerperal fever were the priorities. Chloroform and ether were interventions in childbirth that the early doctors used to control the pain of childbirth. Women could be completely asleep during the delivery of their child and not remember a thing. What a blessing to the few women who became exhausted during their labors and truly needed this to relax and allow their bodies to push the child out on its own. Women and doctors were excited with this new way of giving birth—anesthetized; however, like all other forms of interventions there were risks, up to and including death.

Forceps deliveries began occurring more frequently in the 1800’s for two reasons. The first is that doctors felt that they would shorten labor and thus the pain a woman
would be forced to endure, but this is not true because the insertion of forceps, the tearing associated with their use, and the pressure needed to pull a child out are very painful on women not given pain relief. The other was that more and more doctors began developing their own models. An obstetrics textbook published in 1915 displays “a few of the hundreds of forceps models”. There was no consistency in the type or their use; however, all did agree that the function of the forceps is simply one of traction, not rotation (DeLee 1915). Of course, this was preached more than it was practiced. One could walk by a woman and by the smell tell if she had forceps injuries—vesico-vaginal fistulae, tears in the wall between the vagina and the bladder causing continuous leakage of urine from the bladder—because of doctors having incorrectly and/or injudiciously used the metal instrument (Mitford 1992).

And many more women died of infection after delivering in lying-in hospitals in the 1800’s. Puerperal fever was rampant in the first obstetric hospitals. In 1847, Semmelweis was credited with understanding the method of controlling puerperal fever after nearly halting spread of the disease at the Vienna Lying-In Hospital. He observed that this disease occurred exclusively in hospitals—never at home—and usually in the doctor’s clinic of the hospital (the hospital was divided into two clinics—the doctor’s and the midwife’s). In fact, the doctor’s clinic had 4 times the puerperal fever that the midwife’s clinic had. He discovered that the doctors would perform vaginal examinations (and in most cases a higher number than the midwives) without washing their hands after performing autopsies or between examinations on different women. Puerperal fever was a death sentence to both the woman and the baby and was seen less often in midwife’s patients for more reasons than just the lack of washing hands (Mitford
1992; DeLee 1915). Midwives tended to perform less vaginal exams and with this introduced less infectious matter; they didn’t feel the need to regularly check the progress a woman was making in labor, rather they learned to read a woman’s body language and determine what stage of labor she was in.

Other popular and unfound interventions used by doctors in the nineteenth century included bloodletting—the delivering physician performed this by puncturing a vein or by applying leaches to the woman’s abdomen or her vagina. This was supposed to relieve the ever so common local aches and pains associated with childbirth. Emetics were given for convulsions and ergot for inducing labor. The physicians did their best to control the pain and complications of puerperal fever by giving the new mother a purgative of calomel (a mercuric compound which can cause mercury poisoning); however, it was commonly followed by opium needed to counteract the excessive dose of calomel (Brackbill et al. 1984). The first ob/gyn’s entrance into childbirth was symbolized by an introduction of medical interventions that were not proven safe and have now been shown to be harmful. Midwives still continued to practice during this time period and into the twentieth century; however, their number of deliveries continued to drop as physicians and hospitals became more abundant and began convincing women that a hospital with a doctor was safer than a home birth with either a doctor or a midwife.

1.3 1900-1960: New “Advancements” in the Field of Obstetrics and Their Subsequent Tragedies

New interventions continued into the twentieth century. The turn of the century’s medical interventions included douching patients’ vaginas with bichloride of mercury (now known to be a teratogen). In 1933, a White House Conference on Child Health and
Protection wrote a report entitled, “Fetal, newborn, and maternal mortality and morbidity,” and in it, the participants came to the conclusion that excessive intervention during labor and delivery was a principal reason for excessive maternal and infant mortality (Wertz and Wertz 1989). So even before hospital delivery took its stronghold here in the United States, the interventions obstetricians used were known to be detrimental. Even back then, doctors had to be “doing something.” It seems to have been against their philosophy from the beginning to just sit back and let a natural process such as bearing a child progress on its own. As we have learned from watching other species of mammals birth, nature will take its course and progresses smoothly when distractions are kept to a minimum.

But even with the use of harmful interventions, conditions did improve and childbirth did become safer. The country during the Great Depression had seen an increase in puerperal fever and infant mortality as well as a decline in public health in general (Garrett 2000), but in the 1940’s, with the introduction of antibiotics, blood transfusions, better sanitation, better nutrition and understanding of the human body, infection control understanding and implementation, and a host of other factors, childbirth did become safer—for both home and hospital deliveries. Life in general was better and the baby boom was on. The economy was good and there was more money available for luxuries of all sorts. Because of the good economy and advances made in health, hospitals began to pop up everywhere and lured people in with statements of being able to cure their illnesses and enhance the quality of life—for the right price of course. The price of medical care quickly increased and by the end of the 1960’s, medical insurance companies had jumped in to help in that area. By this point, virtually
100% of deliveries were done in the hospital therefore leaving hospitals and physicians to claim their direct role in the decline of maternal and infant mortality. Maternal mortality declined from 582 per 100,000 in 1935 to 107 per 100,000 in 1945 and continued to decline until the early 1980’s when the rate began to rise again (Cunningham et al. 1997).

Health was better for everyone during the decades of the 40’s through 60’s; vaccinations were being developed, life expectancy was going up, public health was making breakthroughs, jobs were plentiful, and the country as a whole was healthy and happy; life was better for everyone, not just expecting women. Both mother and baby were now surviving more cesarean sections which previously would have claimed at least one life; moderately premature babies were surviving and going on to lead fairly normal lives; puerperal fever was becoming much less of a problem; and other infections seemed to be under control (Garrett 2000).

Claiming the advances made in their field, obstetricians said that it was because of childbirth now being done in the hospitals, but that was not entirely the case because the shift to the hospital coincided with these other breakthroughs and childbirth would have been safer even if it had not shifted to the hospital. Even today, obstetricians still believe that transferring childbirth to the hospital was “the outstanding advance during the 20th century” (Cunningham 1997), not any of the breakthroughs which were listed above. The few midwives still attending home births during this time period tended to attend only the births of poor or immigrant women and were also blessed with a decline in mortality and morbidity. In England during this time period of the early to mid 1900’s, it tended to be the opposite, with the poorer women typically going to hospitals to deliver,
but the same because as in all industrialized countries, mortality associated with childbirth was declining.

And along with this time period of great advances in health came breakthrough new medical interventions into childbirth, each with their own unrecognized and potentially dangerous risks and side effects. How can anyone forget the physical, emotional, and psychological results of DES (diethylstilbestrol), X-rays, discouraged breastfeeding, separation of families during labor, diuretics and other diet pills to control weight gain, belief that babies didn’t feel pain, scopolamine, prophylactic forceps deliveries, and the thalidomide babies. Discussions of these topics will be brief as most people are somewhat aware of research proving that their use or belief of value is no longer valid.

Diethylstilbestrol, more commonly known as DES, was the first synthetic estrogen ever synthesized and was prescribed to millions of pregnant women between 1938 and 1971. Believing that low levels of estrogen caused miscarriage, DES was hailed as a “wonder drug” because it supposedly prevented miscarriage, was cheap to produce, and could be taken orally. DES’s popularity increased and it was soon prescribed to pregnant women not at a risk for miscarriage. Nineteen hundred forty-one marked the year that the FDA approved DES for medical use in humans, but not for use during pregnancy. In 1947, under much pressure from major drug companies, the FDA approved DES for use during pregnancy, but DES was never FDA approved to prevent miscarriage. The approval for use during pregnancy was done even after several studies found that DES promoted cancer in lab animals. DES was even the active ingredient in some “vitamin” tablets given to healthy pregnant women.
In 1952, questions concerning the effectiveness of DES in preventing miscarriages were raised and a controlled study done at the University of Chicago in 1953 found no beneficial effect whatsoever in preventing miscarriage and in fact, found that it brought about higher rates of miscarriage, preterm delivery and infant mortality. The results were supported by several other studies. In the 1960’s six of the seven leading obstetrics textbooks stated that DES did not prevent miscarriages. Unfortunately, the obstetricians did not acknowledge or know of the evidence found in these studies and continued to prescribe the drug. The appearance of previously rare clear cell adenocarcinoma (CCA) began appearing in young women in 1970; and in 1971, the link between DES and CCA was confirmed. The FDA then advised against the use of DES during pregnancy, but some physicians continued to prescribe DES to pregnant women and it was sold to other parts of the world well into the 1980’s. The DES incident was an embarrassment to the FDA (Northrup 1994; DES Cancer Network).

The women who took DES (the DES mothers) were at an increased risk for breast cancer, but the majority of the side effects of the drug were found in their daughters—the DES daughters. CCA has been estimated to affect one in 1000 DES daughters and causes them to get the disease at reported ages of 7 to 48 rather than the most commonly affected age of over 70. DES daughters are also at a higher risk for infertility, tubal pregnancy, miscarriage, premature delivery, T-shaped uteruses, and immune system impairment. DES sons are also at risk to suffer immune system impairment as well as reproductive tract abnormalities. Effects on the DES grandchildren are not known (DES Cancer Network; Travis 1999; Boston Women’s Health Book Collective 1992). If there had been good things to come out of the DES incident, it would have been tougher.
regulations from the FDA concerning approval of drugs and off-label use of drugs, and pregnant women attempting to find out more about the treatments received during pregnancy. However, as the country will keep finding out through more tragedy, neither happened.

X-rays were another intervention that obstetricians considered safe and commonly used for almost 50 years—until the negative consequences on embryogenesis, carcinogenesis, and genetic mutations were discovered in the late 1950’s. Fetuses and children are ten to twenty times more susceptible to the carcinogenic effects of radiation because their cells are rapidly dividing, and children born to mothers who had had X-rays have a higher incidence of leukemia, Down’s syndrome, and among the daughters, more miscarriages and fetal deaths during their childbearing years. The genetic mutations that occurred can be passed down to subsequent generations (Cunningham 1997). The question of the safety of X-rays to the child was asked many years prior to the safety and effectiveness studies done in the 1950’s, but even with questions raised, a prenatal care textbook published in 1937 stated that there was no risk to the child as long as the examination was carried out by a competent radiologist or radiographer. An obstetrics textbook published in 1947 also stated that there was no risk (DeLee and Greenhill 1947). However, the 1960 edition of the prenatal care textbook referenced above clarified the “misunderstanding” and stated that use of X-rays may be harmful to mother and child (Wagner 1994).

X-rays were used for everything from determining gestational age, multiple pregnancy, presentation of baby, and, most commonly, pelvic measurements of the mother—all of which could have been determined by less intrusive ways such as
palpation of the abdomen or manual pelvimetry measurements. Pelvimetry done by X-rays is not very accurate and has now been proven to increase the risk for cesarean section (Cohen and Estner 1983). And even manual measurements aren’t very accurate or important because of the molding of the baby’s head and the expansion and change of shape of the pelvis during labor and delivery. Obstetricians still try to determine pelvimetry, but nothing truly determines the ability of a baby to pass through a woman’s pelvis quite like a baby does.

The discouragement of breastfeeding began occurring in the 1940’s and is a tragedy in itself. As confidence in women’s bodies decreased and society became even more captivated with science and technology, the formula industry managed to convince almost everyone that artificially produced milk was superior to that of species-specific human milk. Formula companies began spending thousands of dollars competing to give free samples of formula and other items to maternity wards in order to increase use of their product; and at the same time, they discouraged breastfeeding. Research has now shown that of the mothers who received free samples of formula in the hospital, over 90% continued to use the brand they were given by the hospital (Coburn 2000). But it wasn’t just the free samples and claims of convenience which caused the decline in breastfeeding; separating mothers from their babies also contributed. Babies were sent to the nursery so that they could be “better cared for” by nurses rather than their own mother. Mothers who planned to breastfeed where shunned and talked down to by hospital nurses and some nurses would not bring the baby to the mother if she knew the mother planned to breastfeed.
We now know that there are over 200 compounds found in breast milk that science cannot replicate. These include compounds that provide temporary immunity to all diseases the mother has been vaccinated against, fight infection, help the immune system mature, aid in digestion, and support brain growth. Babies who are breastfed have a decreased risk of diarrhea, ear infections, asthma, allergies, childhood obesity, and childhood cancers. Mothers who breastfeed are blessed with lower rates of blood loss postpartum and ovarian and breast cancer; they also tend to lose weight gained during their pregnancy more quickly (Coburn 2000; Vanchieri 2001).

Families were not just separated after delivery when the baby was sent to the nursery, but also before delivery. Fathers were not typically allowed in the delivery (or labor) room until well into the 1970’s in some areas of the country. Many obstetricians felt that the fathers were an annoyance or even a threat in the delivery room; most obstetricians believed the father wouldn’t be able to handle himself or feared that the husband would try to protect his wife from any interventions he might choose to use. They also felt that the husband should not see his wife “in that manner.”

Dr. Robert Bradley made monumental strides in allowing and describing why it was so important for mothers to have natural births, to breastfeed, and for fathers to be active in the birth of their children and by this, he helped to increase family bonding during pregnancy, birth, and the postpartum period. He encouraged husbands to listen to their wives and take care of their emotional and physical needs during pregnancy and childbirth. He wrote that the husband’s presence calmed the mother, made labor easier for her, and increased the likelihood of a mother to breastfeed her baby; he also discussed the benefits of mother-baby rooming-in, a concept that would not become widely
accepted in hospitals until the decade of the 90’s. Dr. Bradley’s work was far ahead of it’s time, but a small percentage of couples were blessed enough to use the Bradley Method of childbirth in the 1950’s and 1960’s (Bradley 1981); a method which midwives were consistently using.

Another big mistake made by obstetricians in the mid-twentieth century was the “battle of the bulge”. Obstetricians believed that excessive weight gain was the predominant cause of preclampsia and eclampsia during pregnancy, and their method of prevention was to limit pregnant women’s weight gain and in some cases even ordering women to lose weight during their pregnancy. A sudden weight gain due to fluid retention is a symptom of preeclampsia; however, during the 1950’s and 1960’s, weight gain became viewed as a cause of preeclampsia. This prompted many obstetricians to order pregnant women to gain very little weight (less than 20 pounds), or if the woman was overweight, to lose weight (Katz Rothman 2000). No telling how many starving pregnant women and their fetuses suffered from malnutrition due to their doctor’s orders. This was an impossible feat and as each prenatal visit proved that the expectant mother could not follow orders, her confidence in her body and her ability to properly care for her baby was challenged, and in some cases, destroyed. Simply stated, her body told her she was hungry, but she couldn’t listen to her body and what it was telling her because it is bad for the baby; what is she to do—satisfy her hunger or take care of her baby? Either way, someone is not getting what is best and we now know that if a woman went against her body, both suffered.

Diuretic and weight control drugs were so commonplace during the 1950’s and 1960’s obstetric practice that the July 15, 1962 issue of the prestigious and peer-reviewed
*American Journal of Obstetrics and Gynecology* had four full-page ads for drugs claiming to suppress weight gain. The drugs advertised included Phenobarbital and amphetamines (Katz Rothman 2000). Phenobarbital is now classified as a FDA Risk Category D (studies in pregnant women show positive evidence of human fetal health risk) and amphetamines are classified as Category C (animal reproduction studies are positive for fetal abnormalities. Information from adequate and well-controlled studies in pregnant women is not available...benefits of the drug may justify potential risks to the fetus) (Rybacki and Long 1996). We now know that limiting weight gain excessively, or ordering a weight loss during pregnancy, is not in the best interest of mother or fetus; and even with the use of amphetamines and “the benefit of the drug...justify(ing) potential risk to the fetus”, why use a drug when you don’t know the potential risks. We also now know that a higher weight gain during pregnancy results in healthier babies. This problem of the 1950’s and 1960’s has been corrected in present day obstetrics and women are “allowed” to gain more weight; however, there is a new problem concerning weight gain and nutrition that involves either the inadequate or excessive weight gain that comes with poor nutrition.

Obstetricians, and pediatricians, in this era believed that babies did not feel pain and if there is one thing even the most uneducated person knows it is that babies do feel pain. The “no-pain” belief was so strong that surgical procedures were done without anesthesia or anesthetic. For many decades routine infant circumcision, for example, was done without any anesthesia/anesthetic. And what is even more appalling about this is that circumcision without pain relief for infant boys continued beyond this era and into the 1990’s and some speculate that anesthesia/anesthetic is not used 100% of the time.
even today (Ritter 1992). According to current ethical guidelines, surgical procedures cannot be performed on research animals without anesthesia. But neonatal circumcision has been done without anesthesia. Marilyn Milos (ibid) viewed infant circumcisions performed without any form of pain relief and wrote the following statement on it.

...The silence was broken by a piercing scream—the baby’s reaction to having his foreskin pinched and crushed as the doctor attached the clamp to his penis. The shriek intensified when the doctor inserted an instrument between the foreskin and the glans, tearing the two structures apart...the baby started shaking his head back and forth—the only part of his body free to move—as the doctor used another clamp to crush the foreskin lengthwise, which he then cut...the baby began to gasp and choke, breathless from his shrill continuous screams. How could anyone say circumcision is painless when the suffering is so obvious...During the next stage of the surgery, the doctor crushed the foreskin against the circumcision instrument and then, finally, amputated it. The baby was limp, exhausted, spent. I had not been prepared, nothing could have prepared me, for this experience. To see a part of this baby’s penis being cut off—without an anesthetic—was devastating...

But yet, physicians felt that the responses expressed by the infant during the circumcision were not due to pain. Thankfully, today most circumcisions are performed with some form of pain relief and physicians acknowledge that babies do feel pain.

Scopolamine was considered by many women to be a drug that relieves the pain of childbirth and was considered the primary choice of “pain relief” by obstetricians; whether it was actually the “choice” of laboring women is not clearly known as informed consent back then was not what it is today. Some women stated that they loved “the twilight sleep” (as scopolamine was known as); however, many did not know how they were acting while under the effects of this amnesiac and hallucinogenic (Mitford J 1992. Scopolamine is not a pain killer; it is an amnesiac and hallucinogenic. While on the scopolamine the mind and body would still feel pain, it just was not remembered. Their
bodies would react in “animalistic” ways and the nurses and doctors who inflicted this upon women felt justified by women’s behaviors to treat them as they pleased because the woman would not remember it and the husbands were not present to watch the abuse. It gave the obstetrician complete control to do as he pleased because the woman could do nothing. Scopolamine is a perfect example of how obstetricians took away women’s dignity, self-control, and the memory of their birth experience. This quote explains it fully:

Many women loved it and would say, “My doctor was wonderful. He gave me a shot to put me out as soon as I came to the hospital. I never felt a thing.” Those women weren’t put out, but they didn’t remember what had happened to them—at least not consciously. When these women thought they were “out” they were awake and screaming. Made crazy from the drug, they fought; they growled like animals. They had to be restrained, tied by hands and feet to the corners of the bed (with straps padded with lamb’s wool so there would be no injury, no telltale marks), or they would run screaming down the halls. Screaming obscenities, they bit, they wept, behaving in ways that would have produced shame and humiliation had they been aware. Doctors and nurses, looking at such behavior induced by the drug they had administered, felt justified in treating the women as crazy wild animals to be tied, ordered, slapped, yelled at, gagged (Harrison 1982).

Scopolamine told women that their bodies were like machines and that their involvement really wasn’t needed to produce a baby; sadly, this way of thinking is still felt today and new interventions which will be discussed later continually reinforce it (Davis-Floyd 1992). The scopolamine tragedy had many emotional and psychological tragedies—no birth stories to tell the children they bore, being uneducated about the birth process when they were present at their daughter’s deliveries, their daughters not having a mother to answer those so important questions and grandmothers who delivered in the pre-antibiotic era to tell about the horrors of her day. It’s no wonder that so many daughters
of these women feared birth; they only knew of horror stories or what their doctors told them.

The physical consequences associated with scopolamine affected the baby far more than it did the mother. The mother’s main risks were injuring herself while under the effects of the drugs and/or an increase in the need of operative delivery (which was commonplace anyway). However, the baby had the potential to suffer consequences up to and including death from the drug. Scopolamine was usually given in combination with morphine, and it was more commonly this mixture that affected the baby. Obstetricians were warned not to give the mother these drugs if delivery was one to four hours away because the child could be born narcotized. Unfortunately no one knows how long each woman’s labor is going to last, so an unnecessary number of babies were born narcotized, not breathing, and only the lucky were resuscitated in quick enough time to avoid life-long complications or death. The 1947 edition of *Principles and Practice of Obstetrics* clearly states that “there is danger to the baby. The fetal mortality is increased due to the cumulative effect of the drugs on the child’s respiratory center and to the increase in operative intervention” (DeLee and Greenhill 1947). A certified nurse-midwife stated that “the babies were often born unconscious themselves. You’d have to give them drugs to reverse the narcotics the mother had, and they’d stay sleepy for days” (Mitford 1992). The use of scopolamine faded out in the 1950’s and 60’s due to the dangers to the baby; however, there have been cases of scopolamine being used into the 1970’s.

Forceps use was also considered a standard during through the 1950’s and 1960’s. Obstetricians were instructed on the prophylactic method of forceps delivery--using
forceps on all women regardless of indication. Although it seems that obstetrical
textbooks discouraged the prophylactic use of forceps, this was not the standard of care
and many women were delivered unnecessarily by forceps—whether it be because they
were “knocked out” with drugs, the resident needed to practice, the doctor was in a rush,
or he just felt like doing it. The dangers of forceps remain the same today as they were
during this time period. For the mother they include injury, hemorrhage, and infection.
Tearing of the pelvic organs is inevitable, the cervix can be bruised or torn off, the
forceps can go through the peritoneum, the symphysis pubis can rupture, and the bladder
may be torn into. The injuries for the baby are even more numerous than for the mother
and include compression of the brain, fracture of the skull, hemorrhage, concussion of the
brain, crushing of the orbital plates and injury to nerves and muscles, injury to the eyes,
facial paralysis, pressure necrosis of the scalp, cephalhematoma, compression/cutting of
umbilical cord, damage to organs of hearing, and increased risk for infection, pneumonia,
and meningitis (DeLee 1915; DeLee 1943). These dangers continue to exist today even
with newer advances. Parents today are told that the black and blue appearance or
temporary facial paralysis that results from forceps deliveries are normal and “go away
within the first few days of life” (Stone et al. 1999). Yes, bruises do go away within a
few days, but there is nothing normal about bruises or facial paralysis on a newborn baby,
especially when in most cases it is preventable. Today the forceps delivery has been
replaced with vacuum extraction, but more commonly with cesarean delivery. It is also
important to note that midwives decrease or in most cases eliminate the need for forceps,
vacuum extraction, or cesarean delivery by several factors, but the most common is
encouraging the mother to deliver in an upright position. This way gravity is of
assistance and the perineal muscles and pelvic outlet are not as compressed and restricted as they are in the standard lithotomy position used in hospitals.

The thalidomide tragedy is one which most people remember—children born with several different malformations. Thalidomide was given to women to help them sleep and get relief from morning sickness, but the women did not realize until it was too late exactly what it did to the children that were born alive. Thalidomide does not cause malformations if taken before the 34th day after menstruation or after the 50th day, and the malformation caused depended upon which day the drug was taken, but if the drug was taken throughout the sensitive period, several different malformations could occur. The malformations commonly included missing or malformed limbs, no ears or deafness, missing or extra fingers or toes, partial or total loss of sight, improper formation of the heart, kidney, and other internal organs, improper formation of the anus and genitalia, cleft palate, and flattening of the bridge of the nose (Lenz 1992).

Thalidomide was approved for use in England, Canada, and Australia among other countries, but was never approved by the FDA in the United States; however, it was given to hundreds of American women in sample form. Dr. Frances Kelsey of the FDA had reservations about approving thalidomide without further testing even with its approval by other countries. Her reservations saved numerous American infants’ lives, but the sample given out was enough to do damage. Worldwide it is estimated that 10-12,000 live born babies had severe malformations of their limbs and other organs. About 40% of those born alive did not see their first birthday and today about 5,000 thalidomide victims remain. No one knows exactly how many were miscarried, stillborn, or died very shortly after birth (Stephens and Brynner 2001).
Thalidomide is now back on the market for treatment of erythema nodosum leprosum (ENL), a complication of leprosy (March of Dimes 1999). Thalidomide has been approved for treatment of this condition, but like all other drugs, once approved, it can be prescribed for anything. The manufacturer of thalidomide and the FDA are using extreme caution to ensure that the drug is not prescribed to pregnant women and the educational program required of those being prescribed thalidomide has so far been effective in preventing the birth of thalidomide babies, but since thalidomide is available on the black market and most Americans do not know what thalidomide can do to babies if taken during pregnancy, the country and the world is just waiting for a mistake to happen and for a child to be born permanently and severely disfigured.

The horrors of this era of childbirth can be summed up with this statement by Leilah McCracken.

We remember births from our mothers’ and grandmothers’ times and we have images of shaved women with their feet strapped to stirrups, and drugged out of their minds—either under the influences of scopolamine and morphine, or under general anesthetic. Their babies were pulled violently out of them; often blue from drugs and trauma. We remember our mothers and grandmothers’ vaginas literally needed reconstruction because of the extensive, massive cutting that went along with their “prophylactic forceps operations”. We remember them waking up in agony…with, of course, empty arms because their babies are being suckled by starched white suits with rubber nipples (McCracken).

So many mothers and babies had injuries sustained during the birth process by doctors using practices which are not beneficial and in many cases, simply dangerous. So many factors combined led to numerous complications: fear after being separated from her husband and scopolamine to get rid of the “pain” led to subsequent bloody episiotomies and forceps deliveries. But many say that conditions have improved. They say all of these tragic things are just part of the past because now we know a lot more about drugs
and other interventions. Many say that anything was better than it was before this time period and that is somewhat true. It is a tragedy that mothers and babies were dying because cesareans were so dangerous and puerperal fever and other infections were rampant, but it is no justification for using other interventions before knowing the consequences. Many say that these kinds of tragedies could never happen in today’s age; that now new techniques, machines, and interventions are better tested before being introduced for widespread use and the technology itself is better, but has childbirth really become any safer and have outcomes such as mortality continued to improve? This topic will be addressed in the next section—just how much have conditions improved beginning in the 1970’s and just how much do we know about the newest interventions into childbirth?

1.4 The Current Era: 1970’s to Present

The decade of the 1970’s began a new way of thinking about childbirth. Women were demanding better birthing options, better care during pregnancy, and a “perfect” baby free of mental or physical defects. There was an increased emphasis on humanizing care and focusing more on the family’s emotional and social needs, but there was also a growing dependence on obstetrical technology in an effort to improve birth outcomes and have that “perfect” baby. Women were no longer going to stand for their control during labor being taken away and their partners separated from them. They wanted to be awake and alert during their labor, to have their babies with them, and the ability to make more informed decisions about their birth experience. Women were no longer choosing to have large families and the demand for “perfect” babies was on. The medical community convinced them that the new technology could do this; their babies would be less likely
to die or be born with birth defects if they trusted their doctors and let them do as they felt necessary. And that is just what they did—women began consenting to numerous medical procedures and use of machines and interventions during pregnancy and childbirth because their obstetrician had ensured them that this would provide them with that perfect baby that they so desperately wanted. This way of thinking went unchallenged by many and by this time, nearly 100% of births were being done in hospitals with the use of numerous amounts of medical interventions. Not all had been proven safe. Lately however, this way of thinking has been challenged as infant mortality rates have stopped declining and rates of preterm delivery, cystic fibrosis, and maternal mortality are increasing. If the technology is ever-improving then why aren’t these rates still continuing to go down? Could it be too much intervention now? The answer to those questions and many others depends upon whom you ask, but I believe that many of the interventions, procedures, and technologies worshipped and praised by obstetricians and their patients during this era are not as beneficial (and in some cases downright harmful) as the medical community makes them out to be. I will show throughout this work that midwives, throughout Louisiana, the United States, and other industrialized countries, do not depend on the technology used by the medical community and have at least as good as, and in many cases, better rates of outcomes than obstetrician-attended hospital births.

Before I get involved in the new interventions that have been introduced since the 1970’s or better stated, some of the lack of common sense methods of practice, I want to state that the discussion of each is in no way comprehensive; there is simply too much information on each. Entire books or articles could be or have been written on almost all
of these procedures because for each one there are physical, emotional, psychological, cultural, personal, political, legal, litigious, medical, and monetary factors. I’m trying in this next section, to simply make a statement about the practices used today and challenge the beliefs held about these practices by those following or believing the medical model of childbirth. The use of evidence based practice in obstetrical settings is not commonly found in the United States because unfortunately, the field of obstetrics is clouded by political and lobbying interests, protection from lawsuits, using unnecessary procedures to increase income, and attempting to practice “daylight obstetrics”. [The topics below are in no particular order]

1.4.1 Electronic Fetal Monitoring

In the 1950’s and 1960’s electronic fetal monitoring (EFM) was used in high-risk deliveries because it allowed obstetricians to continuously monitor the fetal heart beat and hopefully, recognize fetal distress or asphyxia sooner. Beginning in the 1970’s, obstetricians began to use EFM on more and more low-risk women and now electronic fetal monitoring is used in nearly 100% of all hospital births. EFM is used so faithfully for several different reasons. Many believe that if the fetal heart rate is monitored continuously, cases of asphyxia can be identified and thus avoid potential cerebral palsy, brain damage, or fetal distress. Unfortunately it doesn’t work that way. Fetal heart rate monitoring is not a reliable predictor for asphyxia because of the high false-positive rate (Goer 1995). Also asphyxia is not a common cause of cerebral palsy or brain damage; it accounts for only 8% (Hall 1989) and 5% (Rosen and Hobel 1986), respectively, of all cases. Since there is no defined standard for interpretation of the printouts from EFM each obstetrician can give a different time in which fetal distress or asphyxiation began to
occur (Beaulieu et al. 1982). There have also been cases of the machine picking up the mother’s pulse rather than the baby’s heart rate thus causing a cesarean section to be performed for severe bradycardia (Goer 1995).

The now widespread use of EFM has not improved outcomes. Randomized controlled trials done on the effectiveness of continuous fetal monitoring have shown, when compared with intermittent auscultation, that EFM does not reduce the rate of perinatal deaths, the rate of APGAR scores below 7 or the number of infants admitted to the neonatal intensive care unit (Thacker and Stroup 1999). EFM has also been shown to be associated with higher rates of cesarean section or operative vaginal deliveries (Thacker and Stroup 1999; van Tuinen and Wolfe 1992; Wood et al. 1981). The use of EFM has been associated with the threefold increase in the cesarean section rate during the 1970’s as well as an increase in the diagnosis of fetal distress or dystocia (Haverkamp and Orleans 1982; National Institutes of Health 1981). Studies have concluded that EFM is not recommended for low-risk pregnancies (Levens et al. 1986) and their benefit during high-risk pregnancies is questioned (Levens et al. 1986; US Preventive Services Task Force 1996; Canadian Task Force on the Periodic Health Examination 1994; Young 1982). Many women who have had their labors monitored by machines rather than nurses have complained about the depersonalization of care received from the nurses, their doctor, and even their husbands. More than one study has shown that personal contact can reduce the rates of complication, stress, and intervention (Kennell et al. 1991; Klaus et al. 1986; Sosa et al. 1980).

Many hospitals prefer using EFM over intermittent auscultation by staff because once the machine is paid for there is no additional cost, but if nurses did it, it would take
them away from doing other things, 1-on-1 patient-nurse care would be necessary, and they would then have to have more people on staff and costs would increase. But as Henci Goer (1995) states, “too few nurses to auscultate really means too few nurses to provide optimum care”. Hospitals and obstetricians also use EFM because the printout is evidence in a courtroom if a lawsuit results, irrespective of the fact that reading the fetal heart rate from the printout is not performed by a set standard and two obstetricians can give different interpretations, just as two expert witnesses can give different testimony which argues for the side that hired them. No one knows the truth. The printout’s main importance in the courtroom is its presence—since EFM is so commonplace now, not using it is considered to be a sign of inadequate or incomplete care (Wagner 1994). EFM is a convenience for hospitals and their staff and this convenience is at the expense of mothers and babies because its benefit has not been proven.

1.4.2 Amniotomy

Amniotomy, the artificial rupturing of membranes, is performed by obstetricians who wish to speed up the natural process of labor, check for signs of fetal distress such as meconium staining, or for the insertion of an internal fetal monitor. While amniotomy does in most cases cause labor to speed up, the open bag of waters is an easy way for infections from vaginal exams or other instruments to affect mother and baby. Other immediate complications of amniotomy include cord prolapse in which the umbilical cord comes down before the baby and results in a life-threatening situation typically requiring an emergency cesarean, cord compression during contractions that can temporarily halt oxygen supply to the baby, more painful contractions, greater head molding, higher incidences of caput succedaneum (pressure-caused swelling of the fetal
head), and an effect on the fetal heart rate (Wagner 1994; Goer 1995). Amniotomy performed too early in labor can affect the natural timing of labor and the severity and frequency of related complications of amniotomy is associated with the length of time the membranes were ruptured. But if amniotomy is performed late in labor, the natural timing is not affected and can actually assist in bringing the head against the cervix to complete dilation (Caldeyro-Barcia 1974).

Amniotomy can have serious risks for a fetus which is already compromised. Since amniotomy is used to test for fetal distress, the obstetrician may not know the status of the fetus until after the membranes have already been ruptured. It will then be necessary to attempt to correct the problem by amnioinfusion, a procedure which involves inserting a uterine catheter and adding physiologic saline, with the potential for infection (Goer 1995). Amniotomy also makes some women feel that their progress in labor is being timed and that they must now dilate in the “appropriate amount of time” or the doctor will be required to take further action in the result of more interventions such as labor stimulation with oxytocin, forceps or vacuum extraction, and cesarean section (Davis-Floyd 1992). Amniotomy to reduce the length of labor by approximately one hour does not justify the risks involved; and as far as performing amniotomy to test for fetal distress—the fetal distress may actually result from the procedure, thus becoming an iatrogenic complication.

1.4.3 IV’s and Nothing by Mouth

It is common practice in today’s hospital to keep laboring women from eating and drinking during labor while attempting to provide adequate nourishment through an IV. The belief surrounding the policy of nothing by mouth is fear that a woman under general
anesthesia will aspirate the stomach contents, leading to a complication afterwards. This belief originated in the 1940’s when many women were given general anesthesia for even normal vaginal deliveries. Today general anesthesia has been replaced with epidural anesthesia, thus virtually eliminating the use of general anesthesia and the chance of aspiration. The chance of aspiration under anesthesia has been further reduced because of practices such as intubation and better training.

The researchers of one study stated that eating and drinking in labor are not always factors in maternal aspiration, but faulty anesthesia administration almost always is (Broach and Newton 1988). The maternal death rate from aspiration has been estimated at 2.6 per 1 million births (Goer 1995) and this rate is lower than that of deaths due to anesthesia, but no one would consider the idea of reducing the number of women under anesthesia during labor, whether it be epidural, regional, or general, in an attempt to reduce mortality. So basically, it’s not humane to let a woman experience some pain during labor, but it is humane to let her starve during a physically demanding process in her life.

Fasting during labor does not completely empty the stomach and causes the stomach acid to become more acidic which can result in even more serious complications should aspiration occur (Johnson et al. 1989). The United States is one of the few countries in which fasting during labor is required; whereas, in Holland and Japan, eating and drinking during labor is common, analgesia is rare, and aspiration is virtually nonexistent (McKay and Mahan 1988). Women delivering in birth centers are allowed to drink and eat lightly during labor; their snacks usually consist of easy to digest foods such as fruits, crackers, jello, light soups, juices, lightly buttered toast with jam or jelly,
and carbohydrate rich foods (Young and Mahan 1982; Worthington et al. 1977). Nurses in large hospitals are told by doctors that they can give laboring women ice chips only, but some nurses state that they let the ice chips melt so that the woman can have a cup of melted ice and some go farther and sneak in fruit drinks or light snacks without anyone else knowing because they feel the policy is outdated (Baton Rouge General Hospital nurses 2000). But the policy still exists because many obstetricians feel that the glucose/dextrose solutions given via IV are sufficient, but they are not and they pose their own set of complications.

The first harm done by an IV is simply the puncturing of the skin and a direct route for infectious agents to make their way into the bloodstream, and since this occurs in hospitals, any infectious agents picked up have potential for concern because of the various multi-drug resistant organisms commonly found today. The second potentially harmful thing done is the heavy bottle and IV stand that, in most cases, immobilizes a woman. Immobility itself has negative affects in that it increases the length of labor, the need for painkillers, the use of oxytocin, and can cause fetal heart rate abnormalities (Brackbill et al 1984). IV’s can also cause fluid overload, which can result in pulmonary or cerebral edema, transient neonatal tachypnea (wet lung syndrome) and/or water weight gain to babies, thus resulting in a larger birth weight and a larger weight loss the first few days of life (Hazle 1986; Keppler 1988). The culmination of side effects can lead to a cesarean delivery.

What is in (or lacking from) the IV solution can also cause problems. If dextrose is present, the blood sugar level can be rapidly elevated, resulting in a temporary energy rise, followed by a rapid drop in the blood sugar level as the amount of insulin produced
by the pancreas is increased. Over the hours of labor and the continuous administration
of the dextrose solution, the physiological havoc reeked on the body will lead to physical
exhaustion (Abrahamson and Pezet 1977). The same problems can result from the
presence of glucose in the IV fluid and it has also been found that glucose can cause a
significant decrease in the pain threshold level and the amount of pain tolerated by a
person (Morley et al. 1984). Potential risks of the sugar solutions to the infant are severe
hypoglycemia after birth (Grylack et al. 1984; Lucas et al. 1980) and neonatal jaundice
(Singhi et al. 1982). IV solutions can cause a negative nitrogen balance in laboring
women because even though they provide calories, they do not provide protein and
nitrogen is a critical element found in protein. Protein is essential during labor to
maintain the necessary nitrogen balance. If the nitrogen balance is not maintained, the
woman faces a condition of starvation (Birnbaum 1977).

So many complications could be avoided, and there would be much happier
women, if they were simply allowed during labor to eat and drink lightly and on their
own demand. Nutritional needs and adequate hydration could be met so simply and
easily.

1.4.4 Cesarean Section and Vaginal Birth After Cesarean (VBAC)

The next topic is one in which we are thankful to have because it is at times a
procedure which saves the lives of mothers and infants, but at the same time represents
the ultimate medical intervention in childbirth. The cesarean section represents the main
advance in the field of childbirth in this century, but this life-saving procedure has
become the topic of furious debate among obstetricians and other professionals involved
in the field of childbirth. The debates range from what cesarean section rate is too high
and if the rate should be lowered (and if so how); if women should be allowed the option of elective cesarean; if vaginal birth after cesarean (VBAC) is too dangerous to consider; and if cesarean section should become the preferred method of delivery for all women. More attention has been given to the topic of cesarean section than anything else in the field of childbirth; numerous books by people on both sides of the cesarean debate are available and the number of journal articles is endless. Cesarean section involves so many different factors and emotions that discussing them all could be exhausting; therefore, this discussion will only brush the surface.

Many factors have contributed to the rise of cesarean sections and many of them have nothing to do with medical indication, but with social factors. The factors and their order of influence vary from author to author, but they include a belief that cesareans decrease perinatal mortality, an increase in birth technology and medical intervention, fear of litigation, convenience, increasing income, social acceptance of cesarean birth, assumed safety, assumed decrease in risk of urinary incontinence or pelvic organ prolapse, and peer acceptance. Over the years and through the studies done, we know that cesareans do not decrease perinatal mortality and in fact, babies born by cesarean fare worse than their vaginally born counterparts, cesareans result in more maternal mortality and morbidity, and they do not decrease the risk of urinary incontinence or pelvic organ prolapse. And for the most part, cesarean rates are influenced upon those factors which have nothing to do with medical indication.

The cesarean rate in the United States in 1970 was only 5.5%, but quickly rose to approximately 25% in the late 1980’s and has not significantly budged since (Goer 1995). The cesarean rate in Canada is not significantly different, but this is not true among other
industrialized countries. During the same period, the Netherlands and Czechoslovakia maintained national cesarean rates of 5-10% and it is proven that “countries with some of the lowest perinatal mortality rates in the world have caesarean sections rates under 10%” (Wagner 1994); these countries also have lower maternal mortality rates. As of 1993, the United States infant mortality rate ranked 25th among industrialized nations (National Center for Health Statistics 1997). The World Health Organization recommends a nationwide cesarean rate of 10-15% for industrialized countries and the United States Federal Government goes even farther to state a recommended rate of 12%. The Healthy People 2000 and 2010 goal was to reduce the cesarean delivery rate to no more than 15 per 100 deliveries. One author who studied national cesarean section rates concluded that “little improvement in outcome appears to occur when rates rise above about seven percent” (Lomas et al. 1989).

And to further complicate matters, the cesarean rate varies greatly between states. In 1993, Louisiana had the highest cesarean rate of 27.7 and Alaska had the lowest of 15.2. Alaska and Colorado were the only states with a rate close to the Healthy People 2000 goal. States with lower cesarean rates generally have higher rates of VBAC delivery; Alaska had the highest VBAC rate with 40.0, a rate almost quadruple that of Louisiana with the lowest rate of 11.2. The geographic area with the highest cesarean rate was the South with the lowest rate being in the West (Clarke and Taffel 1996). The states with the some of the lowest cesarean rates are also those with a larger number of midwives practicing, and those with the highest rates generally have fewer midwives practicing. With all of these goals for lowering the rate, it will only get harder to achieve because the debates mentioned above have become more and more tense and the cesarean
rate is now on the increase again. Sadly as everyone keeps trying to decide what is best, more women are suffering unnecessary cesarean sections and some of them will die due to needless cesareans.

The number of unnecessary deaths from cesarean sections is more than one would expect. If we take the cesarean rate of approximately 24% and assume that 12% of the cesareans are truly necessary, then 50% of all cesareans performed are not necessary. This amounts to about 500,000 needless cesareans a year. Take that and calculate mortality rates from one study of 6/100,000 for vaginal delivery and 31/100,000 for cesarean delivery (Lilford et al. 1990), then 125 women could have avoided death and their babies would still have their mothers with them. This number does not include the morbidity which results from surgical procedures nor the monetary costs. The costs associated with unnecessary cesareans is staggering; “in 1991 the difference in cost between the average vaginal delivery and cesarean section was $3100. Halving the cesarean rate would not only reduce the human cost but would save more than $1.5 billion annually” (Goer 1995).

It is believed by many in the medical community that cesareans reduce the perinatal mortality rate and many also believe that cesarean delivery is safer for the baby, but neither of these are true. Because cesarean sections can and sometimes do truly save babies’ lives, obstetricians have been led to believe that cesareans will reduce perinatal mortality, but this is not entirely true because the obstetricians may not be directly aware that the baby died hours or days later due to respiratory distress syndrome or some other condition. Many researchers have looked at the rates of cesarean section and perinatal
mortality on all levels, from nationally to cross nationally, and have failed to find any significant correlation (Wagner 1994).

The time period in which the cesarean rate was rapidly rising (1965-1990) showed considerable improvements in the perinatal mortality rate, but the improvements were not due to an increase in the cesarean rate, but due to the better care for premature infants or those with other specialized needs. Studies done in hospitals with cesarean rates remaining fairly constant during the above time period also had decreases in perinatal mortality, so the increase in cesarean was not the reason and several noted increased risks to the mother (Porreco 1985; Minkoff and Schwarz 1980; O’Driscoll and Foley 1983; Pearson 1984; Sepkowitz 1992). These studies basically come to similar conclusions: “excellent perinatal outcome can be achieved with modest abdominal delivery rates” (Porreco 1985), “the risk to mothers with cesarean section is still far beyond that from vaginal deliveries” (Minkoff and Schwarz 1980), “strong evidence that cesarean birth rates and perinatal mortality rates are not necessarily closely linked” (O’Driscoll and Foley 1983), and “the inexorable growing cesarean section rate in the United States is the result of one of the least controlled clinical experiments that has occurred in medicine…unconvinced that cesarean section and perinatal mortality rates necessarily have a reciprocal relationship” (Pearson 1984). In the 1985 edition of Williams Obstetrics, the leading obstetrical textbook, there is a statement which reads, “Certainly, maternal and perinatal mortality and morbidity are typically higher with cesarean delivery, in part because of the complication that led to the cesarean section and in part because of the increased risks inherent in the abdominal route of delivery”, but many of
these “complications that led to the cesarean section” most likely could have been avoided in the first place thus leaving the increased risk to the surgery itself.

While not improving the perinatal mortality rates, cesarean sections do have adverse effects on both mother and baby when compared with a vaginal delivery. These effects can present themselves in the short or long term. The risks to the baby include respiratory distress syndrome, abnormally fast breathing, and other breathing problems; therefore resulting in admission to NICU and/or increased separation from the mother who is recovering in a different room, difficulties with breastfeeding, lower Apgar scores, fetal injury by the obstetrician cutting the baby with the scalpel during delivery, and in cases of planned cesarean section, iatrogenic prematurity (and all of the complications associated with preterm delivery) due to a miscalculation of the due date (Wagner 1994). The complication of respiratory distress syndrome is more common in babies whose mothers had planned cesarean deliveries. “The incidence of respiratory distress syndrome is less among infants whose mothers were allowed to go into labour prior to their section than in those of mothers who were sectioned without the benefit of labour” and respiratory distress syndrome is a leading cause of infant mortality (Lomas and Enkin 1989). The rate of fetal laceration during cesarean was found to be 1.9% in one study (and only one of the 17 lacerations was noted by the obstetrician who cut the baby) (Smith 1997). However, since the study was done retrospectively and not all lacerations are noted, the real rate is higher. Marsden Wagner M.D, formerly of the Maternal and Child Health Division in the European Regional Office of the World Health Organization estimates the laceration rate to be as high as 6% (Wagner 1994). And these are just the immediate risks. A recently published study found that the risk of adult asthma is
increased in those delivered by cesarean section (Xu et al. 2001). More relationships will be found.

The risks of cesarean section to the mother are numerous. Some of the risks to the mother, other than that of increased maternal mortality, include damage to uterine blood vessels, damage to the urinary bladder, increased blood loss, decreased bowel functions, respiratory complications, extension of the uterine incision, anesthesia accidents, wound infections, and lower subsequent fertility (Wagner 1994). Wound infections and fever following delivery are fairly common and occur in approximately 20% of all cesareans. If this happens in the mother, the infant is likely have to have a fever diagnostic workup to test for potential infections. Women undergoing cesarean delivery were found in one study, to be 1.8 times more likely to be rehospitalized than women having spontaneous vaginal deliveries (Lydon-Rochelle 2000).

The cesarean can have an effect on the mother’s future reproductive ventures by increasing her chance of having an ectopic pregnancy and/or placental problems in subsequent pregnancies. Placenta previa (the placenta partially or completely blocking the cervix), placenta accreta (abnormally firm adherence to the uterine wall), placenta percreta (the placenta grows into the uterus), and abruptio placentae (the placenta prematurely separating from the uterine wall) are all more common in subsequent pregnancies after the mother’s initial cesarean section (Homminki and Merilainen 1996; Clark et al. 1985). All of these conditions can result in death to mother and/or baby and it appears that these complications are becoming more common. The incidence of abruptio placentae increased significantly in the United States between 1979 and 1987 (Saftlas et al. 1991) and the rate of stillborn infants due to abruptio placentae is
increasing (Fretts et al. 1992). Placenta previa can result in hemorrhage and/or death in the mother, and placenta accreta or percreta “assumes considerable significance clinically because of morbidity and, at times, mortality from severe hemorrhage, uterine perforation, and infection” and can ultimately result in hysterectomy or death in the mother (Cunningham et al. 1997).

The psychological risks to the mother have been much less studied, but they are just as detrimental. A multitude of letters from women outraged or emotionally traumatized by their cesarean sections have poured into the national office of C/SEC, a cesarean support group and education service, and to the home of Nancy Wainer, a leading authority on cesarean prevention and VBAC (Cohen and Estner 1983). There is a connection between cesarean delivery and postpartum depression or other psychological morbidity (Garel 1987). The establishment of successful breastfeeding is lowered due to the initial separation and the time involved in recovering from major abdominal surgery.

The increase in birth technology and the use of interventions commonly associated with hospital delivery have been shown to increase the rate of cesarean section. The use of electronic fetal monitoring, amniotomy, epidural anesthesia or other narcotics, lithotomy position for delivery, and induction (or stimulation) of labor, for example, are all associated with an increase in the cesarean section rate, and when all of these interventions are used simultaneously (as they commonly are), the cascade effect is detrimental. Use of interventions also has an emotional impact on the woman for it may cause her to become more nervous or frightened, thus causing further problems due to the reaction to stress, or what is commonly known as the fight or flight response.
The cascade effect is a simple one to understand. Patient M goes into the hospital for a scheduled induction and with induction comes the electronic fetal monitor and thus, immobilization of the patient. Because the contractions caused by the drugs are more intense, she decides to have an epidural. The epidural causes her labor to slow down so more drugs are needed and the doctor also performs an amniotomy to try to speed up labor. Because Patient M cannot move her lower body, she is even less able to move or change positions and spends most of her labor flat on her back (this position decreases blood flow to the baby). Several different things can result at this time to result in a cesarean section: the baby could come under distress because of all of the drugs used, could come under distress because of the decrease of blood flow, the fetal monitor may show distress, the cervix may have not been ready to dilate and the induction failed, she could take too long to dilate (there is a time limit to length of labor after the bag of waters has ruptured); she could make it to complete dilation but be unable to push because of lack of sensation caused by the epidural or from exhaustion due to the physiological havoc caused by the IV fluids, or she may be diagnosed with cephalopelvic disproportion (CPD) because the lithotomy position for delivery contracts the birth outlet. This is only one example of the cascade effect and some of the results.

A second possible reason for the increase in cesarean sections is obstetrician’s fear of malpractice suits. Obstetricians have some of the highest malpractice insurance premiums and they may be sued until a child they delivered turns 18 years of age, specifically “if there is evidence of developmental damage traceable to birth injuries” (Wertz and Wertz 1989). One study found a “positive association between malpractice claims risk and the rate of cesarean delivery” (Localio et al. 1993), but “malpractice did
not become an issue until the late 1970’s—after the cesarean rate had already tripled” (Goer 1995). Malpractice lawsuits involving cesarean deliveries generally fall into one of three categories: [1] failure to perform a cesarean in a timely fashion, [2] negligent performance of a cesarean, or [3] the performance of an unnecessary cesarean (US Department of Health and Human Services 1980). Most lawsuits result from one of the first two categories, untimely or negligent performance of a cesarean; however, due to the increasing knowledge of negative physical and emotional effects of cesarean to mother and baby, there is likely to be an increase in the number of lawsuits resulting from unnecessary cesareans. The American College of Obstetricians and Gynecologists (ACOG) surveyed its members on their fear of lawsuit and their performance of cesarean section and found that fear of lawsuit was the reason most commonly given for performing cesareans (American College of Obstetricians and Gynecologists 1985). I wonder how many times that reason is written on a patient’s chart. Performing major and potentially unnecessary abdominal surgery on a patient to avoid a lawsuit goes against all medical ethics and the Hippocratic Oath of “First do no harm”.

Many of the reasons listed on patients’ charts as indicators for cesarean include dystocia, cephalopelvic disproportion (CPD), failure to progress (FTP), breech, multiple gestation, postdate, macrosomia, or prior cesarean. In many cases these reasons are not justified and possibly used to make the delivery more convenient for the obstetrician. A simple way to think of dystocia or FTP is that the woman has spent more time in labor than the obstetrician or hospital regulations feel she should have, especially if her waters have ruptured, whether naturally or through amniotomy. Most hospital regulations stipulate that once admitted, the woman should progress one centimeter per hour. For
most women, specifically primiparas, this is unrealistic and usually involves more interventions such as pitocin (which will be discussed later), forceps or vacuum extraction, or cesarean section. Obstetricians claim that cesareans for dystocia/FTP are done because long labors can cause fetal distress, but this is not supported by evidence. Two studies did not find significant differences in the Apgar scores of babies with long labor. Apgar scores would be depressed in true cases of fetal distress (Bottoms 1987; Hunter 1983). Convenience is an underlying reason for cesarean for dystocia/FTP and is supported by one study which found that cesareans performed for dystocia are more common in the evening than at night during sleep hours or during the day when office visits and other surgeries are scheduled (Fraser et al. 1987). A release from the National Center for Health Statistics found that “while births were more common on weekdays than on weekends in 1989, they have become even more concentrated on weekdays since 1989…The single most popular day is Tuesday” (National Center for Health Statistics 1999). This suggests that obstetricians’ convenience is paramount.

Cephalopelvic disproportion (CPD) is the term used when it appears that the baby is too big to pass through the mother’s pelvis, but like dystocia/FTP, it is overused. True CPD is rare and is most likely caused by hospital conditions such as lithotomy position for labor. One study conducted found that neither birth weight over 4000 g (>8 lb 12 oz) nor birth weight over 4500 g (>9 lb 14 oz) increased the relative risk of cesarean (Sokol 1982). Another researcher found that during the years in which the cesarean rate was increasing, the average birthweight had increased only 2 ounces, but the cesarean rate had doubled (Marieskind 1979). And many women who were sectioned with their first child because of CPD have gone on to deliver much larger babies, sometimes pounds heavier,
vaginally (Cohen 1991). Many also do not realize that the diagnosis of CPD cannot be properly and adequately diagnosed until after the mother has reached full dilation, but some obstetricians make the diagnosis before the baby has even been carried to term. One woman I talked with after her delivery told me that her doctor felt that since the baby was going to be so big she may need a cesarean and made her labor and deliver in the operating room just in case (Gilbert 2000). She had a vaginal delivery, but the way she was treated was not justified.

Many obstetricians also recommend cesareans for twin or breech deliveries. The rationale for cesarean breech delivery is that the baby is more likely to suffer injuries during the delivery, but this is not the case. Breech babies tend to fare worse than their vaginal-born counterparts regardless of method of delivery, and breech babies are more likely to be cut by the scalpel during a cesarean delivery (Smith et al. 1997). Delivering in the lithotomy position for a breech delivery (or vertex delivery) is the worst position because it increases the incidence of fetal distress, requires the mother to push the baby uphill, and the mother’s pelvis is not as flexible because it is fixed into position by the pressure of the delivery table (Goer 1995). Michel Odent, M.D. commonly attended vaginal breech deliveries in his maternity clinic of the state hospital in Pithviers, France, with much success and claims that

“our only intervention will be to insist on the supported squatting position for delivery, since it is the most mechanically efficient. It reduces the likelihood of our having to pull the baby out [with forceps] and is the best way to minimize the delay between the delivery of the baby’s umbilicus and the baby’s head, which could result in the compression of the cord and deprive the infant of oxygen. We would never risk a breech delivery with the mother in a dorsal [lithotomy] or semi-seated position…most breech births in our clinic do end up as vaginal deliveries” (Odent 1994).
Vaginal delivery of a breech is becoming a lost art in the United States as more and more obstetric residents are not trained in managing this type of delivery. The use of external cephalic version to turn a breech baby into a vertex position is not used by many obstetricians because of fear of the version resulting in placental abruption, hemorrhage, or fetal distress. These complications can result if the version is done by not-so-gentle doctors using an aggressive amount of force on women. But, if it is performed by “a gentle, patient manipulator” on a “comfortable, relaxed mother” (the way it has been long been done in various cultures throughout the world by midwives and doctors) these complications should not result (Goer 1995). The rationale for cesarean for all twin deliveries is that most twin deliveries result in at least one baby being in the breech position.

Vaginal birth after cesarean (VBAC) for a short period of time was gaining popularity and many women were opting for this, but the number of women choosing it is beginning to decline again. Prior to the 1970’s when the classical or vertical incision was common during cesareans, there was concern about uterine rupture or dehiscence of the uterine scar during labor and VBAC was not recommended. But during the 1970’s the lower uterine transverse incision become standard and was associated with a much lower rate of uterine rupture or scar dehiscence. Because of the new incision type and volumes of evidence proving VBAC to be safe, in the mid-1980’s VBAC was allowed in many hospitals and in 1988, ACOG issued a set of guidelines for VBAC (American College of Obstetricians and Gynecologists 1988). VBAC has been proven safe and is associated with fewer risks to both mother and baby than repeat cesarean section. Unfortunately,
attempting a VBAC has not become a standard with many obstetricians letting the patient decide if they wanted to attempt a VBAC or have a repeat cesarean section.

The main concern with VBAC is the very small chance of uterine rupture or uterine scar dehiscence as it should be called because in the majority of cases the uterus does not rupture, rather “the separation is usually like opening a zipper: neat, bloodless, and benign” (Goer 1995). Uterine rupture does occur in some labors, but the rate is extremely low—less than 0.5% and closer to 0.3% in labors allowed to progress normally (ibid). Because of this extremely low risk of uterine rupture, obstetricians feel that they should allow their patients the choice of attempting a VBAC, but this is irrational because (as it stands today) women are not allowed to choose a primary cesarean section without medical indication so why should a repeat cesarean without medical indication be any different. If it is this small chance of complication that they use to justify repeat cesarean then all women should be allowed to choose for primary or repeat cesarean because according to results from one study the probability of a woman needing an emergency cesarean for another serious and unpredictable condition such as fetal distress, cord prolapse, or hemorrhage is 2.7%, well over 5 times the rate of uterine rupture during labor (Enkin 1989). The risk of uterine rupture is increased when obstetricians use interventions such as induction of labor, but this will be covered in more detail during the topic of induction of labor.

VBAC is very successful. Approximately 70% of women succeed, but this high success rate has not changed physician’s attitudes about encouraging their patients to attempt a VBAC. When obstetricians truly encourage their patients to attempt a VBAC most women do not refuse a trial of labor, but many obstetricians do not encourage
VBAC. Their reasons are “respect for patient autonomy, a reluctance to change long-held positions [once a cesarean, always a cesarean], a wish to avoid a failed vaginal birth after cesarean…, or fear of litigation (Kirk et al. 1990). Convenience also plays a big role because the surgery is scheduled and they don’t have to worry about the delivery occurring at an inconvenient time. At least one study has found that “our findings are consistent with the idea that obstetricians occasionally perform cesarean sections to manage their time, which does represent a form of economic self-interest” (Tussing and Wojtowsycy 1992). So maybe it’s the combination of convenience as well as more money that drives cesarean whether repeat or primary, especially when one considers that some obstetricians charge twice as much for a cesarean than for a vaginal delivery.

The money factor comes into play more when cesarean rates are compared to the socioeconomic status of the mother or if she delivers in a private, for-profit or public hospital. Women of low socioeconomic status have higher rates of adverse maternal and neonatal outcomes as well as more complications during pregnancy; and therefore, would be expected to have higher rates of cesarean section, but it is opposite. Poor women with less than adequate access to prenatal care, inadequate nutrition, and greater than average stress in life have lower rates of cesarean section than their healthy counterparts even after accounting for differences in maternal age, parity, birth weight, race, ethnic group, or complications of pregnancy or childbirth.

“The rates tend to be lower among women covered by Medicaid, those giving birth in public hospitals, and those using hospital clinics as opposed to private-practice physicians. Thus, the institutional and financial conditions surrounding the obstetrical care of women in lower socioeconomic groups are associated with less frequent use of cesarean section” (Gould et al. 1989)
These same conclusions were also obtained by three other studies (Haynes de Regt et al. 1987; Haas et al. 1993; Hurst and Summey 1984). One discussed possible reasons for the socioeconomic differences and the reasons included profit incentive, fear of lawsuits, convenience, identification with the patient [similar social class], and style of practice (Hurst and Summey 1984). A World Health Organization European study using Washington state as example was quoted in Wagner’s book and concluded that

“In the United States the profit motive explained hospital-specific caesarean section rates that were high even by United States standards. This result was consistent with those reported by other investigators. In the United States many private health insurance packages reimburse physicians and hospitals by the procedure rendered. Therefore, more tests and procedures per patient means more income for the physician and greater revenue for the hospital. For-profit hospitals cater to those in socioeconomic brackets high enough to have private insurance coverage of maternity services. At the population level, women in this income bracket are much lower risk than women who are self-pay or women who are enrolled in public insurance programmes. Further, for-profit hospitals in the state of Washington do not offer high risk obstetrical care or neonatal intensive care. Therefore, it is difficult to imagine how these hospitals could justify medically, their excessive caesarean section rate.” (Wagner 1994).

Peer acceptance or the physician factor can explain some of the discrepancies between the rates of cesarean in private versus public hospitals. In public hospitals, the obstetrician must justify the additional expense for the cesarean, in teaching hospitals, the reason for the cesarean must be justified during clinical reviews, but in private hospitals, there is generally no justification necessary unless there is the possibility of a lawsuit.

Lowering the cesarean section rate is not likely to occur unless there is more understanding of the consequences of a high cesarean rate on individuals and society as a whole. Cesarean section is a complicated subject because it is typically the end result of
several factors and the woman having the cesarean is the one with the least amount of control over those factors.

1.4.5 Pain Relievers

Like the three interventions discussed earlier (EFM, amniotomy, and IV), the epidural and other pain relief drugs used during labor are believed to be safe, but they’re not and have many side effects. The main types of pain relief in childbirth include analgesics, anxiety suppressants/tranquilizers, and anesthesia (most commonly epidural anesthesia). Analgesics and tranquilizers act as depressants on the central nervous system and the respiratory system. This can result in a depression in breathing and thus a lower amount of oxygen and an increase in carbon dioxide. The effects of this are mainly seen in the fetus because it also suffers from the depressions, which show up on the EFM as heart rate variability. Once born the infant can also suffer from flaccid muscle tone (causing a lower Apgar score), poor reflexes, and inadequate or no breathing at birth thus requiring resuscitation. The depression in the mother will also interfere with her active involvement in the birth experience and the immediate postpartum experience such as initial bonding and breastfeeding (Wagner 1994). Two studies have found long term associations between the use of these drug types by the mother during labor and self-destructive behaviors of the children born once they became adults. One found a statistically significant increased chance of the infant developing an amphetamine addiction later in life if the mother inhaled nitrous oxide during labor (Jacobsen et al. 1988). The second found an increased risk for adult opiate addiction in the infants born to mothers who were given opiates or barbiturates during labor (Jacobsen et al. 1990). The lead researcher of these studies continues to do work in the area of obstetric
interventions received by the mother and subsequent self-destructive behavior by the adult offspring and has found other associations such as asphyxiation during delivery and/or the need for resuscitation with suicide by asphyxiation, and other suicides by means resembling the trauma they received at birth (Jacobson and Bygdeman 1998). At least three other attempts to do research in this area have not been allowed or have encountered much difficulty in obtaining the data; one expert in the field feels that these studies are being blocked because they are “politically incorrect” (Odent 1999).

Demerol, a narcotic similar to morphine, is commonly used in the United States. Demerol rapidly crosses the placenta and has a depressant effect on the fetal respiratory system, and the higher the dose the mother has, the higher the dose for the fetus as well. And because the baby’s liver is immature, it takes much longer to eliminate the drug from its system than it does for its mother (Yerby 1996). Demerol also has a significant effect on breastfeeding because since it can take days for all of the drug to be eliminated, the baby will receive additional doses of the drug each time the it breastfeeds. It has been said that “Demerol proved to be the (drug) most inhibiting to breastfeeding” (Rajan 1994) because it can cause babies to be “sleepy” or have difficulty latching on. Other complications or side effects to the baby include general sluggishness, skin discoloration, jaundice, abnormal EEG, and abnormal sleep/alertness patterns (Brackbill et al. 1984).

Robbie Davis-Floyd conducted an anthropological study on the experience of childbirth as a rite of passage and talked with numerous women about their thoughts concerning procedures during labor, and this quote about analgesia during labor is powerful:

“I asked for pain medication, but I didn’t really want it. What I really wanted was for someone to tell me that I could do it—to remind me that I
was just in transition and tell me I was terrific, doing great. But they were only too eager to get me to take it. For just a few minutes I thought I couldn’t do it, and so I lost it and took the drugs, and then it was all over for my natural childbirth experience—I got too woozy after that to do my breathing right. I know I asked for the medication myself, and that my reaction is irrational, but I am so angry that it was given so quickly. I didn’t really want medication—I really wanted support” (Davis-Floyd 1992).

One obstetrician stated that “pain thrives on fear, on lack of confidence, and on loneliness”, all common situations in hospital birth today (Dunn 1976). Many hospital personnel overlook the power of personal support during labor in their speed to get the mother pain medication. Studies have shown that having continuous emotional and physical support during labor greatly reduces the need for pain medication and is also associated with the need for fewer medical interventions (Klaus et al. 1992; Kennell et al. 1991). And the emotional support provided has no side effects, contrary to the alternative provided by hospital personnel today. It is a shame that a woman can go through her entire pregnancy scared to death to take a Tylenol for a headache in fear that she might hurt her baby, but go to the hospital where she feels the staff will not do anything harmful to her or her baby, only to be given numerous different drugs with damaging effects during her labor.

The third class of pain relief drug, anesthesia and more specifically, epidural anesthesia has its own set of complications and potential side effects. And to make matters worse, many obstetricians, nurses, and obstetric anesthetists either do not know about the side effects or slide around the truth. I sat through a childbirth education class at the Baton Rouge General Hospital and heard the instructor of the class (a labor/delivery nurse at the hospital) clearly state that there are NO side effects to an epidural, but when one “student” in the class said that she had heard that they can slow
down labor, the nurse clarified and said that epidurals do sometimes slow down labor but if that happens they could give her Pitocin to speed it back up. (So basically we can fix the problems caused by the original intervention.)

Epidurals do have many side effects. Some of the complications for the mother include maternal hypotension, convulsions, respiratory paralysis, cardiac arrest, allergic shock, maternal nerve injury through injury from needle or catheter, infection, hematoma, subarachnoid injection of the anesthetic, spinal headache, temporary urinary incontinence, paralysis, increased risk for forceps/vacuum extraction/cesarean section, fetal malpositioning, longer second stage, and possibly long term backache, headaches, migraines, and numbness or tingling. Potential complications for the baby include jaundice, irregular fetal heart tones, decreased muscle tone and strength, and respiratory depression.

A complication which gets much attention is the increase in maternal temperature because it can lead to fever. Maternal fever can cause fever in the infant, leading to tachycardia, a reduced ability to handle the stress of labor, and persistent fever can lead to hypotension and acidosis (Fusi et al. 1989). “The fetus whose mother has a long labor using epidural analgesia in a hot environment may reach a temperature at which heat-induced neurologic injury can occur” (Macaulay et al. 1992). Consequences of fever to the mother include hypertonic (overcontracted) uterus, hypotension, tachycardia, and metabolic acidosis (Fusi et al. 1989) Fever is more common in women than assumed; one study found that 16.6% of women who received an epidural had fever compared with 0.6% who did not receive an epidural. The babies born to the women with fever were
more likely to have 1-minute Apgar’s of <7, need resuscitation and oxygen therapy, and have a seizure during the neonatal period (Lieberman et al. 2000).

In 1993, over 20 years after epidurals were commonplace in American hospitals, the first randomized, controlled trial to determine the effects of epidural anesthesia was published even though the study was not completed. When the researchers saw the high rate of cesarean section in the group receiving epidurals they stopped the study for ethical reasons (Thorp et al. 1993). That was not the end of the debate on whether epidurals caused an increase in the cesarean section rate and is now the topic about epidurals that is debated most frequently. More work has been done and one study will say that they do not and the next will say that they do. We know the side effects of epidurals in both mother and baby; it would seem obvious that the risk is increased. Whether or not epidurals increase the cesarean delivery rate or not, they do increase the need for operative vaginal delivery such as forceps or vacuum extraction and many other interventions (pitocin/oxytocin, EFM, IV, episiotomy) are associated with the use of epidurals. So it is virtually impossible to place the additional risk on epidurals alone because of the cascade effect and its accumulation of risk factors.

A meta-analysis of studies on this topic had results which “strongly support[ed] an increase in cesarean delivery associated with epidural analgesia. Further research should evaluate the balance between analgesia associated with the use of epidurals, and postpartum morbidity and costs associated with cesarean deliveries.” The study also found that of the women who had an epidural, 70% were given oxytocin (an intervention to counteract the epidural’s slowing of labor) compared with only 28% of the no-epidural group (Morton et al. 1994). The original 1993 study also found that the risk of cesarean
was increased the earlier in labor that the epidural was given, suggesting that if the hospital staff waits until the woman reaches active labor, her chances of needing a cesarean are reduced compared to if she received it at 2, 3, or 4 cm (Thorp et al. 1993). The benefits of having emotional and physical support during labor from someone experienced in labor support, such as a doula still exist, and it has been found that women who have labor support from a doula have lower rates of epidural anesthesia, oxytocin use, forceps/vacuum extraction, and cesarean section, and their babies are less likely to be admitted to NICU (Kennell et al. 1991 Kennell and McGrath 1993).

1.4.6 Lithotomy Position and Episiotomies

The lithotomy position for delivery is another common procedure in American hospitals and basically involves a woman lying flat on her back with her legs apart and up in stirrups as she attempts to push the baby out. This position is very impractical because gravity is not of assistance since the woman is essentially pushing the baby out uphill due to the curve of the birth canal and it can also increase the need for forceps delivery. While in the lithotomy position, contractions tend to be weaker, less frequent, and more irregular. Dimensions of the pelvic outlet can be decreased due to the pressure of the delivery table therefore increasing the length of delivery and making it more difficult. The legs being spread apart and remaining in stirrups can result in venous thrombosis or nerve compression (McKay and Mahan 1984). Similarly fetal distress is caused by the additional pressure placed on major maternal blood vessels and the restriction of blood flow to the baby (Fenwick and Simkin 1987). The lithotomy position results in the need for more episiotomies and an increased incidence of spontaneous tears because it causes a dislocation of the perineum to a farther anterior position. As the head presents, it “is
pushed towards the posterior perineum causing a greater pressure before heading to the vaginal entrance, in which case it may result in a greater stretching of the perineum and the consequent lacerations” (Bonfin-Hyppolito 1998).

Studies done comparing women who delivered in upright birthing positions to those delivering in recumbent positions found that women delivering in upright positions adopted more positions during second stage (delivery stage), had a shorter second stage, had a shorter time between perineal bulging to the birth, were more likely to have an intact perineum or first degree tear, fewer second degree tears, and fewer instrumental deliveries (Bonfin-Hyppolito 1998; Gardosi et al. 1989a; Gardosi et al 1989b). The babies born to both groups were equally healthy and postpartum blood loss was equal between the two groups. Surveys were sent to the group of women who delivered using a cushion which assisted with delivery in a squatting position and 95% of those said that they would request the cushion for delivery again and also stated that they could push more easily, felt more involved and in control, and found their backache was relieved (Gardosi et al 1989b).

Surveys have shown that the only explanation given by doctors “for the continuing use of the lithotomy position at birth, in the face of so much evidence favouring other positions, is for the convenience to the birth attendant” (Wagner 1994). The World Health Organization’s consensus conference on appropriate technology for birth held in Fortaleza, Brazil, April 22-26, 1986 gave the following recommendation concerning the lithotomy position: “Pregnant women should not be put in a lithotomy position during labour and delivery. They should be encouraged to walk about during labour and each woman must freely decide which position to adopt during delivery”
Several women I have talked with have complained about having to deliver in the lithotomy position: “I even asked them if there was any other way we could do this. Could I take my feet out of the stirrups…If I could choose a different position I would; [maybe] go somewhere else, another doctor would let me have it a different way. It really bothered me” (King 2000) and another woman said “I was basically just told there was one way we were pushing and that was in the stirrups…they didn’t offer me any other positions” (Gilbert 2000). The American College of Obstetricians and Gynecologists advises that women not “exercise in the supine position (flat on your back) after the first trimester. It can decrease the blood flow to the uterus” (American College of Obstetricians and Gynecologists 1994). So in that statement ACOG admits that the supine position decreases blood flow and that women should not assume that position for something as short in length as general exercise, yet they place these same women flat on their back during the pushing stage of labor and most of the first stage of labor as well. Why after all of this knowledge and contradictions is it so common and standard?

Episiotomy, the surgical incision of a woman’s perineum to enlarge the vaginal entrance, is the second most commonly performed procedure in obstetrics today; the only procedure performed more frequently is the cutting of the umbilical cord. Much debate surrounds episiotomy and most everyone agrees that the rate in the Unites States is much too high. And it is not going down quickly enough. The episiotomy rate for primiparas in the United States ranges from 70-90% depending upon geographic location. The overall rate on all women in one publication was estimated at 62.5%. The rates for the United States can be further broken down by location of delivery; in birth centers with midwife-attended deliveries the rate is near 20% and for home births it is even lower.
Rates for other countries are 8\% for The Netherlands, 28.4\% for Belgium, and 28.2\% for France (Wagner 1994). Episiotomies should be reserved for those cases in which there is a specific indication, such as confirmed maternal or fetal distress or possibly a breech delivery.

Obstetricians in the United States give three justifications for the high episiotomy rate. They believe it prevents severe tears in the perineum, prevents pelvic floor relaxation, and protects the fetal head. None of these claims are supported by scientific evidence. Obstetricians worry about the 3rd or 4th degree tears in the perineum that extend into the rectum and believe that episiotomies prevent these severe, deep tears, but episiotomies actually extend into these deep tears. Think of a simple dishrag; it is very difficult to rip as you pull on it, but once you take a pair of scissors and make one small snip, it is more likely to rip under pressure. The same logical thinking applies for muscles and skin of the perineum. Several studies have concluded that “this procedure may well increase the incidence of third-and fourth-degree lacerations” (Thorp and Bowes 1989) and have shown that deep tears rarely occur in the absence of episiotomy (Thorp and Bowes 1989; Wilcox et al. 1989; Thorp et al. 1987). The lithotomy position also increases the incidence of episiotomy and of deep tears resulting from extensions of episiotomies (Borgatta et al. 1989; Nodine and Roberts 1987). And even if a woman does spontaneously tear (whether 1st, 2nd, 3rd, or 4th degree) the tear is not any worse than what the episiotomy would have been and spontaneous tears are not as deep, are easier to repair, heal better, and are less painful than episiotomies. But without lithotomy and episiotomy then she may not spontaneously tear and thus would have no stitches or surgical repair to have to contend with.
Episiotomies are also thought to prevent pelvic floor relaxation and this has been believed for far too long. The conclusion of episiotomies’ positive effects was taken as truth with no evidence supporting it. Episiotomies do not decrease the incidence of urinary incontinence or pelvic floor relaxation. Obstetricians have believed since the publication of Joseph DeLee’s 1920 article claiming the benefits of episiotomy, that by preventing overstretching of the pelvic floor muscles, not only could it prevent urinary incontinence or pelvic floor relaxation but that it could increase sexual satisfaction. The sexual satisfaction was mainly for the male partner because as the obstetrician sewed up the episiotomy, they would do extra tightening which was called the husband’s knot, but this extra stitch made many women’s sex lives that of misery because the vaginal opening was not “overstretched” during delivery and when the stitch was done the opening would be smaller than it was previously and made intercourse painful for women. Husband’s knots are very uncommon today, but some older obstetricians still do them. Because the vaginal opening must be reconstructed during suturing, some obstetricians unintentionally suture the wound too tightly or incorrectly requiring additional surgery to correct their mistake.

And as far as urinary incontinence and pelvic floor relaxation, many older women who had generous episiotomies still require surgery because episiotomies are cut when the head is about to be born; and by this point, the pelvic floor muscles are already fully distended. Some speculate that these problems are actually caused during pregnancy while the baby in the womb is pressing against the woman’s pelvic floor during the third trimester; however, I have found no studies to support this claim one way or the other. Studies done to determine if episiotomies prevent these problems have found that
episiotomy does not result in better perineal muscle function. One study found that in women who exercised regularly, urinary incontinence was less common regardless of perineal history (Gordon and Logue 1985). Others concluded that “there is no evidence from this study that the liberal use of episiotomy prevents this problem”, (Sleep et al. 1984) and that “present results do not support the concept that [episiotomy] reduces the risk of damage to pelvic floor muscles” (Rockner et al 1991). A more recent randomized controlled study used electromyographic (EMG) perineometry to determine if there was difference in pelvic floor function between groups receiving or not receiving an episiotomy and found “no difference between trial groups…[in] antepartum and 3-month postpartum EMG perineometry and urinary and pelvic floor symptoms” (Klein et al.). Another study went even farther to say that “obstetricians may be able to reduce pelvic floor injuries by minimizing forceps deliveries and episiotomies, by allowing passive descent in the second stage” (Handa et al. 1996).

The third argument for episiotomy is that a long second stage is bad for the baby because the lack of oxygen and continued compression of the head can lead to cerebral palsy and mental retardation. Like the other reasons, this one is also not supported by medical evidence. Studies done on cerebral palsy and mental retardation conclude that these two conditions mainly occur before labor and delivery, not during; and in order to prevent trauma to the head during second stage, the episiotomy would have to be performed before the head distended the perineum, but they are done after the head has distended the perineum and is visible through the vaginal opening (The 1990). A clinical trial also found no evidence that episiotomy is protective in preventing trauma to the fetal head (Sleep et al. 1984).
Besides not doing any good, episiotomies do harm beyond that of extension of the incision and poor anatomical results from the reconstructive stitching of the vaginal opening. The other risks of this surgical procedure include increased blood loss, significant postpartum pain, pain during intercourse, poor healing of the incision, hematomas, and infection. Few studies focus directly on the postpartum pain, but several have focused on the pain during intercourse and found that women with episiotomies or other perineal trauma resume sexual intercourse later and often experience more discomfort than women with intact perineums or minor spontaneous tears (Sleep and Grant 1987; Thacker and Banta 1983). The incision may not heal correctly in all circumstances and could lead to further reconstructive surgery to correct the mistakes, not to mention the psychological effects this has upon a woman’s life.

Infections in the incision are particularly dangerous because even though they are rare can be deadly. One study reported positive cultures in 76% of episiotomies even though they are supposedly done under sterile conditions (Thacker and Banta 1983). And since these infections are hospital-based, they are more likely to be antibiotic resistant. In the medical literature there are reports of two rare gangrenous infections known as necrotizing fasciitis and clostridial myonecrosis that kill many of the women who contract it and disfigure the survivors. Even though these infections are rare, they represent a significant part of maternal mortality. Through word of mouth I learned of two women in Louisiana (one in St. Tammany Parish and one at Lane Memorial Hospital, Baton Rouge) who died in 2000 due to infections of their episiotomies. One was confirmed by speaking with the obstetrician. The other was not directly confirmed; however, several nurses in the hospital did acknowledge that it happened. One older
study reported that 20% of maternal mortality in King County, Washington, from 1969-1977 was due to these infections (Shy and Eschenbach 1979). And as Henci Goer so bluntly states it when summarizing maternal deaths due to these infection: “Since all fatalities were in healthy women who had uncomplicated labors, their episiotomies literally killed them” (Goer 1995).

Medical studies tend to neglect the emotional and psychological aspects of procedures, but they are just as important and as more and more women suffer from postpartum depression, these issues need to be addressed. Episiotomy is one procedure which has a significant impact on women and is probably the single most hated obstetric procedure. Some have gone as far as to compare episiotomy to female genital mutilation because both involve cutting and manipulated female genitalia. But experts in the field do not think the liberal use of episiotomy is going to significantly change over a short period of time. Davis-Floyd (1992) states that

“since surgery represents the central core of Western medicine, the ultimate form of manipulation of the human body-machine, the legitimization of obstetrics necessitated the transformation of childbirth into a surgical procedure. Routinizing the episiotomy has proven to be an effective means of accomplishing this transformation—even “natural” births in the modern LDR or birthing suite can be transformed into surgical procedures by routine episiotomy.”

Very liberal goals have been set for an appropriate episiotomy rate. The Coalition for Improving Maternity Services set the goal at 20%, a rate which seems to be common in birthing centers, still higher than home births, but much lower than that of hospital births.

1.4.7 Ultrasound

Ultrasound has become increasingly popular over the last few decades and the percentage of women in the United States who receive at least one ultrasound scan during
their pregnancy is estimated to be 60-70% (and steadily rising) even though routine ultrasound scans have never been recommended by the ACOG (American College of Obstetricians and Gynecologists 1997). Ultrasound became commonplace in obstetrics without any large-scale clinical trials to prove its safety just as X-rays did 50-60 years ago and now hundreds of articles speculate on possible risks, but an extremely low number of studies are large enough to give conclusive results. Common reasons given by obstetricians for their judicious use of ultrasound scans include improving the health of the fetus, weight estimates of the fetus, due date calculation, detection of fetal abnormalities, determining the location of the placenta, multiple gestations or breech presentation, and diagnosis of intrauterine growth retardation (IUGR); however, none of these diagnoses (except multiple gestation) are completely accurate even after an ultrasound scan has been performed. Breech babies can spontaneously change to a vertex position at any point during pregnancy or labor just as vertex babies can switch to the breech position at any point; and the diagnosis of placenta previa is not conclusive until labor begins because most placentas will move upwards to a higher location on the uterine wall as the pregnancy progresses, thus needlessly worrying women. And as far as multiple gestation, that diagnosis can be made with much simpler methods such as manual palpation or checking for multiple heartbeats.

Ultrasound scans to determine macrosomia (large for gestational age) are not accurate and tend to overestimate the weight of the fetus and depending upon the obstetrician’s style of practice, a woman may have a cesarean for suspected macrosomia and end up with a baby weighing less than seven pounds as one woman who wrote a letter to Nancy Weiner did (Cohen and Estner 1983). Two studies done on the accuracy
of ultrasound scan using measurements of abdominal circumference and femur length for
determining macrosomia concluded that the screening is associated with a low positive
predictive value. In both studies the sensitivity was near 60% and the specificity near
91% with positive predictive values of 64 and 70% and a negative predictive value of
87% (Chervenak et al. 1989; Pollack et al. 1992). Along with attempting to determine
the weight of the fetus, many obstetricians attempt to calculate the due date—just to
make sure that the woman was right when she told the doctor the date of her last
menstrual period. Due date calculation by use of ultrasonography becomes even less
accurate the farther along a woman is in her pregnancy due to individual development
rates in fetuses and variation in size. And studies have shown that an early examination
or a woman’s own estimation of her due date based upon last menstrual period is as

Ultrasound is the least invasive way to screen for physical abnormalities, but
gives very unreliable results. Ultrasound scans detect between 17 and 85% of the one in
50 babies that have abnormalities at birth and the most commonly missed abnormalities
are cerebral palsy, Down’s syndrome, and heart or kidney abnormalities (Luck 1992), so
countless numbers of women feel confident that their baby is developing normally only
to find out upon delivery that something was wrong. But what is even worse is the false
positives, which result in women who abort perfectly formed fetuses or spend the rest of
their pregnancy preparing to spend the rest of their lives caring for a special needs child
or planning the funeral for their child which will be born perfectly normal.

Ultrasound scans do not improve the health of the fetus and there may be possible
harms. We know that the fetus appears to “feel” the ultrasound because they respond by
moving more rapidly and several studies have found connections between exposure to ultrasound and long-term developmental disorders such as speech delay (Campbell et al. 1993), dyslexia (Stark et al. 1984), and less right-handedness which is a symptom of possible neurological problems (Salvesen et al. 1993).

Studies have also been done on the effectiveness of ultrasound scans to determine intrauterine growth retardation (IUGR), a complication of pregnancy in which there is no treatment for meaning no way to slow or stop the process and return it to normal. Screening for IUGR goes against all principles of screening because normally you only screen for complications you can do something about. Two of the landmark papers published from large randomized controlled trials on the effectiveness of ultrasound stated that ultrasound scans do not improve perinatal outcomes (Ewigman et al. 1993; Newnham et al. 1993) and one went even farther to show a causative relationship between ultrasound and IUGR. Women who underwent ultrasound scans at 18, 24, 28, 34, and 38 weeks were significantly more likely to give birth to a baby affected by IUGR than women who received a single ultrasound scan at 18 weeks (Newnham et al. 1993). This basically stated that ultrasound scans may actually cause one of the problems of pregnancy it is supposed to diagnose.

Other factors related to the safety of ultrasound involves ultrasound not actually being sound at all. Since sound falls between 20 hertz and 20 kilohertz and ultrasound waves fall between 2 and 4 megahertz, ultrasound waves have been classified by the Bureau of Radiological Health as radiation (Albers and Krulewitch 1993). To compound this problem there are no national or international standards for the output characteristics of ultrasonography equipment. One researcher found that the range of spatial peak
temporal average powers had a ratio of 5285 to 1 in a sample of machines and those same
machines had a ratio of 3055 to 1 between the highest and lowest pulse average powers
(Meire 1987). And pregnant women’s exposure to ultrasound is not limited to the actual
ultrasound scan; the Doppler and electronic fetal monitor also emit and work with the use
of ultrasound waves. This is one reason why some (but very few) doctors and virtually
all midwives use a fetoscope for fetal heart rate monitoring rather than the Doppler. The
discussion of ultrasound can be summed up by this statement:

“The casual observer might be forgiven for wondering why the medical
profession is now involved in the wholesale examination of pregnant
patients with machines emanating vastly different powers of energy which
is not proven to be harmless to obtain information which is not proven to
be of any clinical value by operators who are not certified as competent to
perform these examinations” (ibid).

What is so sad about ultrasound is that so many women do not know the potential risks
and unresolved questions concerning it’s use, so they ask their doctor what the soonest
date they can have their ultrasound is because they need to know if the baby’s room
needs to be painted blue or pink. Because of countless numbers of uneducated pregnant
women practically demanding ultrasound for sex determination, even after the questions
are resolved and harm is found in ultrasound, these uneducated pregnant women will be
the driving force behind the continued use of ultrasound scans—for non-medical reasons.

1.4.8 Induction

Induction is defined by the ACOG as the stimulation of labor contractions before
the spontaneous onset of labor for the purpose of accomplishing delivery. Induction of
labor is confused by many with stimulation or augmentation of labor, a process used to
help or speed up a labor that began on its own. The most common drug used to induce
labor is an artificial oxytocin called Pitocin (aka “pit”, the pit drip). Pitocin was first
synthesized in 1953 and by 1974, Pitocin was known to have a 40-50% failure rate. In
1978, the FDA advisory committee removed its previously given approval of Pitocin for
the elective induction of labor and the current *Physician’s Desk Reference* states that
“Pitocin is not indicated for the elective induction of labor.” Even with these advisories,
the use of Pitocin for the induction of labor is becoming even more common (Griffin
2001). The percentage of women nationwide with induced labor doubled from 9% in
1989 to 18% in 1997 (National Center for Health Statistics 1999) and one survey found
that Pitocin induction or stimulation of labor was done 81% of the time in United States
hospitals (Davis-Floyd 1992). Induction of labor is indicated in certain situations such as
high blood pressure, premature rupture of membranes, maternal medical problems, fetal
death, fetal jeopardy, severe pre-eclampsia or toxemia, and severe blood incompatibility,
but induction is all too commonly done for reasons of convenience or a suspected
postdate pregnancy.

Postdate pregnancy is a highly debated topic. Most obstetricians do not like to let
a pregnancy go past 40 weeks even though the range of term is from 37 to 42 weeks; and
then there is the question of accuracy of the due date, especially if the calculation arose
from an ultrasound scan done late in the pregnancy. And then there is the fact that
healthy, white, primiparous women with well established due dates carried an average of
288 days and multiparous women averaged 283 days, periods of time longer than the
accepted and established time of 280 days obstetricians believe to be normal. Based
upon these numbers, many white women should be “postdates”. Black women tend to
carry an average of 8.5 days less than their white counterparts of similar socioeconomic status (Mittendorf et al. 1990).

Most postdate babies are not really postdate, and then if a baby is postdate, most do not suffer from complications typically found in postmature babies. And then to further complicate matters, some babies who are not postdate exhibit signs of postmature syndrome (Nichols 1985; Sims and Walther 1989). And there is not a higher rate of perinatal mortality among postdate babies even though there is a higher rate of macrosomia and meconium stained fluid. Most of the deaths in postdate babies are those weighing less than 2500 grams (the cut off for low birth weight) (Sachs and Friedman 1986; Eden et al. 1987).

Convenience is another reason for the high rate of induction; just as there are more cesareans done on weekdays during work hours, inductions are generally done at a time in which the obstetrician feels that the baby will come during “business hours”. It just keeps getting easier and easier for obstetricians to work an 8 to 5 schedule. But it’s not just obstetricians who are choosing induction for convenience reasons; a lot of uninformed women are requesting that their doctor’s induce them for convenience purposes. However, if these women were informed of the risks of harm to themselves and their babies it is probable that they would think differently about how nice it would be if they could have their baby on great-grandma’s birthday.

There are several risks of induction. Many Pitocin inductions fail because the cervix is not ready to dilate. Some women can labor for days with Pitocin steadily being pumped into their veins only to have a cesarean for dystocia (or their cervix wasn’t ready to open). Pitocin is also associated with a higher rate of operative vaginal delivery
(Crowley 1991) and an increased incidence of neonatal jaundice. Pitocin can cause overstimulation of the uterus, or what some call “titanic contractions”, where the uterus is contracting so hard and the contractions last for so long that placental blood flow is inadequate. When this happens the baby is not getting enough oxygen and fetal distress can occur (thus increasing the need for emergency cesarean or operative vaginal delivery) (Keirse 1991). The pain associated with these “titanic contractions” is also more intense because it feels like they are on top of each other with no breaks in between, requiring many women to have some form of pain relief or other intervention and all of the risk factors associated with it on top of those with Pitocin without actually decreasing the intensity of the contractions (Hemminki et al 1985). Sometimes the placenta is peeled away from the uterine wall during these intense contractions.

Less common but more serious consequences of Pitocin include uterine rupture or iatrogenic prematurity. Numerous studies have been done on the risk of uterine rupture in women attempting a vaginal birth after cesarean and conclude that the rate is higher among Pitocin induced labors than labors occurring spontaneously (Keirse and Chalmers 1991; Zelop et al. 1999). Maternal morbidity in general is increased with induction, especially for VBAC (Sims et al. 2001) because true uterine rupture can lead to postpartum hemorrhage or hysterectomy, but uterine rupture can occur in induced women regardless of whether there is a scar on their uterus. Uterine rupture can also result in fetal death. Iatrogenic prematurity can result with induction if the due date was calculated incorrectly and the baby will be subjected to all the potential problems faced by preterm babies. One study reported that as elective delivery becomes more common the gestational age and birth weight distributions were shifted downwards (Keirse and
Chalmers 1991). These concerns led the participants in the World Health Organization Consensus Meeting concerning appropriate technology for birth to come to consensus on the statement that “birth should not be induced for convenience, and the induction of labour should be reserved for specific medical indications. No geographic region should have rates of induced labour over 10%” (Wagner 1994).

Prostaglandin gel is another method obstetricians use to induce labor, but unfortunately few studies have been done on risks associated with it. The few studies or reviews that have been done have found an association between prostaglandin induction and uterine rupture (Lydon-Rochelle et al. 2001; Vause and Macintosh 1999) and one went even farther to state what is definitely a problem in the field of obstetrics: “There is a dearth of evidence from which to assess the risks and benefits of using prostaglandins to induce labour…This is surprising considering how often prostaglandins are used for inducing labour” (Vause and Macintosh 1999).

Recently a new form of induction drug has completely rocked the childbirth community and it is called Cytotec. Obstetricians are thrilled because Cytotec is THE most effective drug for labor induction, is stable at room temperature, and a 25mcg dose costs less than 50 cents; however, the consequences of its use are not yet known. No one disagrees on Cytotec’s effectiveness in inducing labor; just its safety. Cytotec (generic name misoprostol) is on the market as an FDA-approved prescription drug for treating gastric ulcers; however, as we all know, once FDA-approved it can be prescribed for anything and that is just what has happened—the drug is being used off-label and without any trials or an FDA-testing process for the induction of labor even though the package insert clearly and bluntly states “SPECIAL NOTE FOR WOMEN: Cytotec must not be
used by pregnant women” because of the increased risk of uterine hyperstimulation, uterine rupture, hemorrhage, hysterectomy, and maternal and neonatal mortality. And as stated by Marsden Wagner, “if a practitioner hears about a new use [for a drug] and simply starts using the drug this new way, this is experimenting on patients without the usual safeguards in place for research subjects” (Wagner 1999).

The appropriate method of use has not yet been determined by obstetricians and its present use is awkward and confusing. The unscored 100mcg tablet must be cut in quarters (the smallest possible dose without reducing the pill to powder) and because this process is inaccurate, it causes variations in the dosage in each quarter of the tablet. Most obstetricians use a quarter tablet for induction, but there is no agreement about what is the correct initial dosage, subsequent dosage, intervals between dosage, or route of administration. Some give it orally, some rectally, others inside the cervix or maybe even behind the cervix, and some just let it dissolve in the woman’s mouth. But there is an agreement on the fact that once Cytotec is given, there is no way to take it back and no way to correct the side effects which may occur and this is a reason for concern.

Cytotec has the power to cause unnaturally long and hard uterine contractions to the extent that the placenta shears off, the uterus truly ruptures, or the uterus contracts so hard and long that the baby is deprived of oxygen. One researcher went on to state that “some patients appear to be quite sensitive to misoprostol, demonstrating prolonged contraction responses after a dose of the agent, sometimes in excess of 20 hours after the drug” (Wing et al. 1995). And there is no guaranteed safe way to stop the harmful effects of Cytotec; if hyperstimulation occurs all they can do is wait and watch to see what happens to the woman and her baby.
Most of the studies done on Cytotec induction have focused on women attempting a VBAC; however, some women with no prior uterine surgery have had uterine ruptures after receiving Cytotec (rupture in cases without induction is extremely rare). Most reports of rupture in women with no prior uterine surgery are case reports or posts to ob.gyn list on the Internet, but it makes it no less real. One case report was of a healthy woman who received two intravaginal doses of 25mcg’s before suffering a uterine rupture and subsequent hysterectomy; fortunately, both mother and baby did survive (Wing et al. 1995). Many studies have been done on Cytotec induction and VBAC; however, only three will be discussed here. Two of these articles were published in the same issue of the *American Journal of Obstetrics and Gynecology*. The first article in the issue found a 28-fold increase in the rate of uterine rupture of VBAC women given Cytotec compared with those who went into labor spontaneously, and even though the study had a small sample size, the results cannot be ignored because such a drastically increased rate has been found in this and other studies on the topic. “Uterine rupture occurred in 5 of 89 patients with previous cesarean delivery who had labor induced with misoprostol. The uterine rupture rate for patients attempting vaginal birth after cesarean was significantly higher in those who received misoprostol, 5.6%, than in those who did not, 0.2% or 1 in 423, p=.0001” (Plaut et al. 1999). The second study in the issue dealing with Cytotec and VBAC found a uterine rupture rate of 3.7% (3 in 81 women) (Blanchette et al. 1999). The third study was intended to compare misoprostol to oxytocin for induction, but was stopped on safety grounds after two ruptures occurred among just 17 women receiving Cytotec (Wing et al. 1998).
So after all of this: the studies showing harm, not being FDA-approved for this use, and not being approved for this use by the manufacturer (see Appendix A), how did this happen? Maybe we didn’t learn our lesson about off-label use of drugs after the DES incident—how many years will it be before we stop the off-label use of Cytotec? No one knows, but since its not any good for its intended purpose, maybe we’ll all be lucky and Searle will stop manufacturing it. If there is no supply it doesn’t matter how much of a demand there is.

1.4.9 Summary of the Present Era

So many interventions are performed on low-risk pregnant women and in most cases one intervention leads to another. It’s a cascade effect. No one has just one intervention done to them anymore. It may start that way, but it never ends that way. Induction leads to more pain, which leads to pain medication, which leads to lithotomy position and the inability to push effectively, which leads to episiotomy and/or instrumental vaginal delivery or cesarean section, which leads to more pain medication after the delivery, which leads to difficulties with breastfeeding. Or another common scenario is IV fluids leads to an inability to freely move and change positions comfortably, which leads to laying flat on back in bed, which leads to increased pain and decreased oxygen flow to the baby, which leads to electronic fetal monitoring for possible fetal distress, which causes additional stress in the mother, which leads to even more pain, which leads to an epidural, and from here the same as the first scenario can happen. It can make informed consent complicated and very difficult to understand. In many cases, the woman is not making a very informed consent. How can she? There are so many variables to consider and statements to make that the average person can’t
simply understand it all. I can’t even begin to think how many times I have heard pregnant women say “I didn’t read any of those forms—I just signed them” or “My doctor said it was safe, but I had to sign the form anyway” or “I trust my doctor—he wouldn’t do anything that would hurt me or my baby”. And informed consent is not what it should be called—it should be called informed decision-making, where the woman and her health care provider sit down together and go over the issues and side effects, not in a packet of papers sent home with instructions to just “read and sign these before you go to the hospital” or even worse having to sign them while in labor and going through the hospital admission process. But it can be worse than that—I’ve talked with women who signed informed consent forms right before the procedure was done—without even being given time to read the form before signing it. Informed consent is merely a process hospitals and doctors use to cover their own interests—“she was given the informed consent form and we have her signature right here.”

All of this had led to a decrease in women’s confidence in their ability to give birth. Women have become so used to hearing about or having medical interventions used during pregnancy and childbirth that they have begun to feel that they simply couldn’t have a baby without it. The decrease in confidence in women’s ability to give birth afflicts our society as a whole and has led to the increased dependence on the medical system. Women depend on their doctors to confirm their pregnancy with a blood test (no longer is being three weeks late and having morning sickness good enough) and then they rely on the doctor to tell them their exact due date (and then have it changed a couple of times afterwards). Ultrasound to judge the growth rate of the developing baby has replaced relying on obtaining an adequate nutrition and having an appropriate weight
gain. Women rely on nurses or doctors to tell them how many centimeters they are instead of judging by how they feel and how strong the contractions are. Women rely on doctors to get their babies out rather than themselves. These views have caused so many women to think of pregnancy and childbirth as something that they have to go through in order to have a baby instead of a moving and powerful experience—after all how can it be a powerful experience when you are powerless? And all of this is being passed down to the next generation of childbearing women, most of whom will have these horrendous preconceived notions of what childbirth and pregnancy should be like rather than beginning with an open mind.

And no one knows what is to come in the future. A more powerful ultrasound that provides a 3-D image is now available, but not in widespread use. The goal of a perfect baby is becoming more important and is reflected by the increase in fetal testing, abortion of suspected but not confirmed abnormal fetuses, and more lawsuits for suspected damage to the child while under the obstetrician’s care. There is an increased use of induction and cesarean section being performed without any medical indication and some obstetricians are calling for cesareans to be the preferred method of delivery. Elective primary cesarean section is already being allowed by some obstetricians with no evidence to back up claims of better outcomes. Clinical trials and evidence-based practice seems to be unimportant in the field of obstetrics.

1.5 Midwives, Home Birth, and Evidence-Based Practice

So how are midwives and home births so different from hospital births? The explanations are virtually endless, but revolve around a few central issues: following evidence-based practice, prevention instead of intervention, giving control of the birth
process back to women, and trusting women’s ability to give birth. Childbirth is a natural and normal process in a woman’s life and a woman’s body is well designed to birth a baby. Midwives have a general philosophy that as long as everything is progressing smoothly, whether fast or slow, and there are no signs of tension or stress in the mother or baby, there is no need for interventions.

Each woman’s labor is different and her experience unique so there really is not a concept of a “normal labor and delivery”. Some labors are 30 minutes and some are 3 days. Some women feel little or no pain during birth and others find the contractions excruciating. Some women prefer to eat in labor and some can’t. Some women prefer standing during labor and others prefer lying in bed; so there is absolutely no such thing as a “normal” labor and delivery—each is unique and distinctive, completely different from that of any other woman’s. Midwives respect and appreciate this uniqueness, where obstetricians find it pathological and must do something to make it more normal and thus controllable. The Friedman’s curve of appropriate labor progression revolves around control, and the development of active management of labor gave doctors the ability to control what they saw as an uncontrollable and potentially dangerous process. Control is a key issue in hospital deliveries—nurses control the speed of labor with the Pitocin drip and obstetricians control the speed of delivery of the child with forceps, episiotomies, and cesarean section. In home births, the midwife is a guest in the woman’s home and is there to assist, not control because labor cannot be controlled. It flows at its own pace unless manipulated by unnatural interventions.

Midwives tend to follow the Midwives Model of Care, which revolves around pregnancy and birth as normal events, and includes (emphasis mine):
“Monitoring the physical, psychological, and social well-being of the mother throughout the childbearing cycle; providing the mother with individualized education, counseling, and prenatal care, continuous hands-on assistance during labor and delivery, and postpartum support; minimizing technological interventions; and identifying and referring women who required obstetrical attention.” (Appendix B)

Midwives also tend to focus on prevention rather than intervention or treatment. It is common for prenatal visits to last for 30-60 minutes and include lengthy discussions on adequate nutrition and healthy lifestyle choices, exercise, stress management, relaxation, education about birth options, and resolving fears or apprehensions about the birth process. The long visits allow midwives to develop a relationship with the mother and by doing this will be more prepared to react to any emotional issues that may arise during labor. The midwife also ends up being a friend and support person during the labor and delivery rather than just a health care provider.

Midwives do not routinely, if ever, use the interventions so typically associated with hospital birth. Some of this is due to the expense involved such as with electronic fetal monitoring, but mostly it is due to the belief that these interventions are not necessary. Women choosing to deliver at home are not attached to an IV stand or immobilized in bed; they walk and change positions freely. Women delivering at home do not crunch on ice chips; they eat and drink as they choose. Women at home rarely deliver in the lithotomy position; rather they choose their delivery position and commonly change it.

Every intervention discussed previously is rarely, if ever, used in typical midwife-attended home births because they have not been proven by science to be 100% safe, to be needed, or to be effective, and because the birth process flows smoothly without their use. Support during labor is used instead of anesthetics or anesthesia, intermittent
auscultation is used instead of EFM, slow descent of the head and support of the perineum is used instead of episiotomy, and membranes are not broken unless they are preventing descent of the head or the baby is born in the caul. Use of unproven or unsafe procedures would constitute going against the midwives’ goal of evidence-based practice when there are alternatives with fewer or no side effects.

Another goal of midwives is to build the mother’s confidence in herself and in her body’s ability to give birth without the use of medical interventions by educating her about the various opinions available to her and encouraging her during the rough parts of the pregnancy, labor, or delivery. Surveys conducted by the National Childbirth Trust found that midwives do make a difference in a woman’s birth experience and do increase the woman’s confidence in her ability to give birth. The organization’s policy research officer stated that “[t]hey felt more control during labour, are more likely to breastfeed and less likely to suffer from postpartum depression” and went on to say that the increased confidence midwives give women could have an effect on lowering the cesarean rate (BBC Online Network 1999).

The woman’s partner is also strongly encouraged to play an active role in the experience beyond just being present for prenatal visits and at the head end during the delivery. The midwives encourage the partners to emotionally and physically support their pregnant partner, exercise and eat properly with their partner, as well as educate them about the entire process of bringing a child into the world. Partners are told about various support and comfort measures they can use to support the mother during labor, and a father who has interest in “catching the baby” is commonly allowed to, further enhancing the family bond. The fathers are taught ways to help the new mother continue
breastfeeding and how to be an active part of that process. Older children are encouraged to be at the birth if they choose and are allowed to be as active in the delivery process as the family feels comfortable with. After all, birth is either the beginning or continuation of a family unit and there are only a few reasons for anyone to be excluded if they wish to be there and be a part of the experience. And this great family experience occurs in the family’s home.

Midwives teach couples the basics of nutrition. Prenatal vitamins are not commonly given to midwives’ clients; rather the midwives observe their clients eating habits and give advice or constructive criticism. The basic purpose behind nutrition and personal responsibility for health over “popping a pill” is that it sets the basis for a healthy lifestyle. The couple’s life is about to change and the addition of a new baby is the perfect time for a lifestyle adjustment. If pregnant women begin assuming responsibility for their own health by taking care of their bodies, eating well, and becoming educated about facts regarding their health, they will take personal responsibility and make their own educated decision rather than relying on someone else to take care of them or make those decisions for them. Midwives also encourage their clients to learn the facts about various birth options, talk it over with their partner, and then make the choice that best suits them.

Midwife-attended home birth is becoming increasingly popular. Several TV shows have had short segments in which a home birth occurred or was referenced; two of which were Judging Amy and Gideon’s Crossing. Articles on celebrities Cindy Crawford, Thandie Newton, Ricki Lake, and Kristin Brooks, who have had home births, have been found in several popular magazines such as Fit Pregnancy, Parents, and
Oprah’s magazine O, and articles have also been published in various magazines on the home births of middle-class families. Even The Baby Story has an occasional show with a home birth. As it currently stands, 99% of all births still occur in a hospital or birthing center, but that will not always be the case as more states are legalizing midwives, and the number of Certified Professional Midwives (CPM) and licensed midwives are growing nationwide.

Midwife-attended births are on the increase; however, there is a national geographic disparity on midwife-attended births. New Mexico, Alaska, Delaware, Florida, Georgia, Maine, Massachusetts, New Hampshire, Oregon, Vermont, and Rhode Island have the highest rates of midwife-attended births; whereas, Arkansas, Kansas, Louisiana, Missouri, and Mississippi have the lowest (National Center for Health Statistics 1999).

The debate over the safety of home birth has been ongoing since the widespread acceptance of hospitalized childbirth. The debate centrally focus on preventable morbidity, mortality, and unforeseen complications that require emergency transport. Numerous studies have found that home birth is as safe as hospital birth, but the majority of obstetricians are firmly against home birth; and the average woman is so uneducated about the birth process, the evidence found supporting home births, and the evidence against common obstetric procedures, that any opinion they have is based upon what is told to them by their obstetricians, not by their own research and logical thinking. Obstetricians claim that hospitals are safer because of advanced technology, even though childbirth is regarded by many as a natural process. Standard obstetrical textbooks go on to say that home birth is not a sound decision for anyone. Obstetricians have made it
very difficult for midwives to perform home births by not backing them or by denying
them hospital privileges. These attempts to stop home birth by deeming it dangerous
have slowed the increase in the number of home births, but still over 25,000 home births
occur each year in the United States.

The midwives attending these home births are adequately trained to handle
possible complications, and all midwives carry oxygen, oral suction, IV setup, oxytocin,
methyl ergonovine, Doppler or fetoscope, and resuscitation devices. Most home births
occur within thirty minutes of a hospital, and if the mother is transferred, the majority
arrive with enough time prior to delivery to evaluate maternal/fetal status and to make
perinatal management decisions. The women who choose home birth describe it as a safe
family event where they maintain personal control in a major life event, and often have
and emphasize high levels of satisfaction with their birth process. Studies on home birth
have reported the opposite of what most obstetricians believe: a low morbidity and
mortality rate among home births; but planning, risk assessment, and the presence of a
well-qualified attendant is essential in order to decrease risk.

Studies done on home birth have found that home birth is as safe as or safer than
hospital birth. The studies show equal or lower rates of infant mortality, maternal
mortality, episiotomy, cesarean section, forceps delivery, electronic fetal monitoring; as
well as, equal or higher Apgar scores, number of babies breastfed, and patient satisfaction
in the birth process. These studies will be further discussed in a following section. One
man, Jock Doubleday, is so confident that home birth is safer than hospital birth that he
has offered 25,000 dollars to the first person who can produce a study published in an
industry journal in any country, in anytime period, showing hospital birth to be safer, in
any category, for most mothers and babies than home birth with a trained midwife in attendance. This offer was first made at $10,000 in the Autumn 1998 issue of Midwifery Today and the offer was raised afterwards when no one attempted to claim the money. Although this proves nothing scientifically, to my knowledge, no one has yet come forward with a study.

1.5.1 Safety of, Outcomes of, and Other General Information About Home Birth

The vast majority of women who choose home birth are white, married, over 25 years old, have already had a child, and are more educated than the average woman choosing hospital birth. The women are also more likely to not smoke, not drink, and not use street drugs than women choosing hospital birth and are more likely to initially breastfeed and to breastfeed their babies for longer. Very few teenagers attempt home births as do African-Americans. These characteristics are found consistently, regardless of time period or country in which the study was done.

A study performed in Australia using postcode as a determination of socioeconomic status found that when compared to those choosing hospital birth, “a significantly larger proportion of homebirth women (67.2% v. 38.2%) was found to belong to the two highest classes” (Crotty et al. 1990). A result which contradicts the general public’s belief that women who choose home birth are uneducated and poor, and do so because they cannot afford the expense of a hospital delivery. Most women who choose home birth do so because they are more educated and thus more likely to research birth options and to seek out ways to have those options they believe to be the best. The income makes the birth options possible because nearly all insurance companies have exclusions for home birth. Other studies found that homebirth mothers were older, more
educated, more feminist, more willing to accept responsibility for maintaining their own
health, better read on childbirth, and more likely to be multiparous (Cunningham 1993;

Home birth mothers generally report an extremely high level of satisfaction, both
with their midwife and the birth process. When asked if they would like to have another
home birth the majority would make the choice again (Woodcock et al. 1990 Davies et al.
1996) and generally give higher ratings for their care provider than do women who were
delivered in a hospital setting. Mothers who deliver at home also feel that the
environment enhances the bonding process (Cunningham 1993). Reasons most
commonly expressed by mothers as reasons for choosing home birth include, but are not
limited to, more control, preferring to be at home, more natural, more relaxed, partner
more involved, less stress for baby, no need to leave other children, and safety. Women
who were ultimately transported during labor or afterwards comment positively on the
amount of time they were able to labor at home and rarely comment adversely on having
to transport (Davies et al. 1996).

The cost savings of a midwife-assisted home birth over a typical hospital birth are
absolutely staggering, especially when the figures are given for possible national savings.
The figures below are taken from the Mothering Perinatal Healthcare Index (Mothering
Magazine 1993). The numbers are based upon 1992 data, but are still relevant today.
The average cost of a midwife-attended birth in the United States is $1200 whereas the
average cost of a physician-attended vaginal delivery is $4200. If 75% of pregnancies
utilized midwifery care, the country could save $8.5 billion a year—a staggering amount
of money that could go to other programs. When the fact that midwives have lower
cesarean rates than physicians, even after controlling for risk status, is taken into account, even more money could be added to the savings listed above. Just by reducing the cesarean rate to the standard of 12% set by the World Health Organization and the US Department of Health and Human Services could result in saving of $1.5 billion a year. The cesarean rate set of 12% is typically higher than that found with midwifery care. If these figures were adjusted to this decade, they would be considerably higher. The entire *Mothering* Perinatal Healthcare Index is found in Appendix C and includes even more figures just as astounding as those discussed here.

Babies born to women having home births are less likely to be low birthweight (LBW) than those born in obstetrician-assisted hospital births. A significant factor for this is the increased focus on nutrition, but even after controlling for risk factors, the difference still applies. One study conducted in Australia found a LBW of 1.9% in infants born at home and compared the result to the LBW of all Western Australian singleton Caucasian births which was listed at 4.7% (Woodcock et al. 1990). Another Australian study found a lower prevalence of LBW among home birth than hospital birth (Crotty et al. 1990). The results of these studies had the same conclusion as one conducted in Washington state. The Washington study went farther to conclude that births attended by licensed midwives in home birth settings had a lower rate of LBW than births attended by certified nurse-midwives (CNM) in the hospital without controlling for risk status. After controlling for low-risk status, the researchers found that physician-attended hospital births had higher rates of LBW than did midwives, regardless of place of birth (Janssen et al. 1994).
Perineal outcomes are better in home birth situations where episiotomies are rarely done and tearing is kept to a minimum by utilizing various delivery positions and perineal support as the head crowns. The majority of women at home deliver over an intact perineum with studies showing rates of 69.6% (Ackermann-Liebrich et al. 1996) and 63.6% (Crotty et al. 1990). Episiotomies at home birth in the United States are only allowed in emergencies, so rates are usually less than 2% while keeping the rate of 3rd and 4th degree tears to a minimum, amounting to a rate of usually 2% or less.

Interventions are also kept to a minimum and the outcomes are typically better than those achieved in hospital settings. Studies have found lower rates of pain medication, induction, forceps or vacuum delivery, and cesarean section in women having home births when compared with hospital births without worse outcomes among the infants; incidentally, the infants born at home had higher Apgar scores. The women also had lower rates of subsequent complications associated with the interventions avoided during these deliveries (Crotty 1990; Ackermann-Liebrich 1996; Wiegers et al. 1996; Woodcock et al. 1994).

Transports to the hospital during or after labor/delivery are extremely low because many of the women who would potentially require a transport are referred out during their pregnancy, which further reduced risks. Primiparous women are significantly more likely to transport than multiparous women; however, this is not an indication against home birth for first time mothers or necessarily of additional risk, just a notation of an increased chance of transport. Transports for primiparous women have been documented in two studies as being 36.2% (Crotty 1990) and 32% (Tyson 1991) with lower rates of 12.5% and 8%, respectively, for multiparous women. Both of these transport rates are
higher than those found in a study which will be discussed in detail later in this section. Transports to the hospital were found to be uneventful and occurred most commonly because of prolonged labor. The most common reason noted for transporting of infants was breathing problems (Tyson 1991; Davies et al. 1996). Emergency transports are extremely rare and because of the rarity, are commonly not addressed in studies on the safety on home birth.

Perinatal mortality in home births has not been found to be significantly different from that of hospital births. However, an increase in perinatal mortality has been documented among home births that occurred without the presence of a properly trained attendant, among women who made arrangements to deliver in the hospital but didn’t make it, or women who made no prior birth arrangements (Northern Region Perinatal Mortality Survey Coordinating Group 1996). The topic of perinatal mortality will be further discussed in the analysis of the following studies.

1.5.2 Detailed Analysis of Studies on Home Birth

The four studies below will be discussed in detail and some results from a meta-analysis will also be included. Each of the four studies differ in at least one aspect. The first study is a retrospective descriptive study on the incidence and mortality of home births in New Zealand. The second study is a prospective descriptive study on midwifery care in the Netherlands. This study focuses little on mortality and significantly more on medical interventions and why women choose home birth rather than hospital birth. The third study is similar to the first study except that it is a prospective descriptive study performed in the United States. The last study analyzed is a case-control study of
midwife-and physician-attended home births, but the central focus addresses the concerns of breech, twin, and post-date home birth.

The study by Gulbransen et al. (1997) involved 9776 planned home births over a twenty-one year period. The definition of home birth used in this study, as in all subsequent studies, was any birth where home was the intended place of birth at the onset of labor. This study was different from the others; however, because any patient referred out of home birth prior to the onset of labor was excluded from the study. This study was similar to the other studies, because any woman requiring hospital transfer intrapartum or postnatally had their outcomes counted as home births, because home was the intended place of birth at the onset of labor. The definition of a perinatal death in all studies consisted of fetal death of 28 or more weeks gestation and infant death under seven days (given per 1000). Maternal mortality was defined as those occurring during pregnancy or within three months of giving birth (given per 10,000). Data for this study was collected from a standard data sheet filled out by the midwife and filed by the Home Birth Association for each home birth. This self-reported means of data collection could lead to bias, but it is fairly unlikely because the study was retrospective, so the midwife was unaware of a potential study and would have less reason to intentionally falsify data. For reference, perinatal mortality rates were calculated for low risk women delivering at National Woman’s Hospital. The selection criteria used to confirm low risk for the comparison group were age 20-35, parity 1-2, delivery at 37-42 weeks, singleton, vertex, no medical disease, and birth weight over 2500 grams. This group did not act as a control; merely as a reference group.
The annual reported home births ranged from a low of 11 in 1974, and then steadily and continuously increased to 1226 in 1993. There was a total of 29 deaths out of 9776 births in the study, resulting in a perinatal mortality rate of 2.97 per 1000. Nine of the 29 (31%) deaths resulted from lethal congenital anomalies. National Woman’s Hospital had, within the study years, 29,496 selected low risk births with 69 perinatal deaths for a perinatal mortality rate of 2.34 per 1000. A chi square test of total home birth deaths against deaths born to the selected low risk group did not demonstrate a significant difference. One maternal death due to streptococcal puerperal sepsis on day 7 postpartum occurred among the home birth group, giving a maternal mortality rate of 1.02 per 10,000.

The discussion restated significant results from the study and discussed advantages and limitations of the study. The study concluded based on the fact that the perinatal mortality rate of 2.97 per 1000 in the home birth group was not significantly different from the selected group of low risk women delivering at National Woman’s Hospital (2.34), that home birth is a safe option. The limitations to this study were that the group of low risk women was not a control, and that the injury and medical intervention rates were not investigated. The study also did not look at the demographic and socioeconomic factors, which may influence both the home birth decision and the perinatal mortality rate. The researchers noted in their discussion that bias in the study could have resulted from improper or inadequate recording of data, but the data was less likely to be intentionally falsified because of the retrospective aspect of the study. Improvements could be made by sufficiently matching the low risk group at National
Woman’s Hospital so it could act as a control, and also to record and analyze the injury and medical intervention rates among the home birth and the control group.

The study by Wiegers (1998) focused on some of what were considered limitations to the previous study. This study focused little on mortality, and focused mainly on the occurrence of medical interventions and why some women choose home birth over hospital birth. The study was descriptive even though it did have a reference group which could make it have a characteristic of a cohort study. It is also important to note that the Netherlands has a completely different attitude about the process of childbirth and midwives’ role in it. In the Netherlands, home birth is much more accepted, and obstetricians do not have the monopoly on hospital privileges. General practitioners as well as all licensed midwives possess hospital privileges.

A perinatal outcome index was constructed to measure differences in planned home birth and planned hospital births, and a perinatal background index was formed in order to control for bias and other possible effects of self-selection. The perinatal outcome index consisted of questions about the delivery and the conditions of mother and baby after birth. The perinatal background index consisted of questions about the medical/obstetrical history and about the present pregnancy. The purpose of the perinatal background index was to confirm that both study populations were truly a population at low risk for complications in order to prevent a significant difference between the home birth group and its hospital birth reference group.

Analysis of the perinatal outcome index showed variations between the women delivering at home and the hospital. In primiparous women, there were few differences between the home and reference hospital birth group. Intervals longer than twelve hours
between rupture of membranes and birth, and other problems such as need for
sedation/pain medication, and neonatal problems in the first 24 hours were more frequent
in planned hospital births than planned home births. In multiparous women, the
differences between the two groups was even greater. Complications such as referral
during labor, perineal laceration, inadequate progress, episiotomy, medication in the third
stage of labor, placental retention, postpartum hemorrhage, and blood transfusions all
occurred more frequently in planned hospital births. The perinatal outcome in
multiparous women was significantly better for planned home birth than planned hospital
birth. There was no relation between place of birth in primiparous women. The analysis
of data collected indicated that the social factors based on trust in home birth as perceived
by themselves and significant others and expectations of hospital care during childbirth
were the strongest predictors of choice in home birth. Personal factors based on
perceived health status, existence of minor symptoms, and fear of pain or complications
during childbirth played only an indirect role. In this study, demographic variables such
as age, education, and urbanization had no effect.

This study’s results concluded two things. The first is that for low risk women,
outcome of planned home birth is at least as good as the outcome of planned hospital
birth in nulliparous women, while for parous women, outcome of home birth is
significantly better. The second is that the decision of home or hospital is based
primarily on social factors, with confidence in home birth and hospital expectations as the
strongest determinants of choice. The study also stresses that in order to maintain
confidence in home birth and reduce fear of unplanned transfer to the hospital, certain
conditions must be met. One is a selective system to ensure that only low risk women are
encouraged and allowed to deliver at home. The second is an excellent system of cooperation between midwives, obstetricians, and hospitals in order to ensure that all women, regardless of place of birth, receive the care they need. This system of cooperation among health care providers in the United States is not as strong as it needs to be.

The study by Murphy and Fullerton (1998) was done in the United States. This study focused on the rate of hospital transfer and medical interventions, as well as the mortality rate. This study had the limitation of not having any comparison group, but the researchers attempted to compensate for this by comparing the rates they obtained to those of other studies. The problem of bias was present due to the patient’s self-selection of home versus hospital. The only way this self-selection bias could be prevented would be to conduct a randomized clinical trial, but this is not possible due to the differing options, choices, and opinions concerning hospital or home birth. This elimination of choice could also result in a negative impact on the course of childbirth, and thus on its outcome.

Twenty-nine practices that provided home birth services were accepted out of the forty-five recruited. The accepted practices were located in rural and urban settings, and they also spanned several states. Eligible subjects were pregnant women eighteen or older who requested and met all eligibility standards of each individual home birth service provider. All patients were allowed to enroll and collection forms were filled out for each subject. The forms included demographic and perinatal risk information, outcome of prenatal, intrapartal, and postpartum care. Referral to another provider or to planned hospital birth was recorded, and hospital records were requested for women and
infants transferred during or immediately following delivery. All data was reviewed for completeness and consistency, and evaluated reliably by comparing records. Results were estimated to be 92-100% accurate because of the considerable amount of time and effort the researchers spent assessing the validity of the reported results in order to prevent potential bias.

One thousand four hundred and four women enrolled in the study, and there was little evidence among them of prenatal risk factors such as smoking or drinking. At the onset of labor, 1221 women remained eligible and only these were included in the study. During labor, 102 women were transferred, leaving 1119 to give birth at home. Ten women and fourteen neonates were transferred after birth. The most common reasons for transfer were prolonged labor or rupture of membranes, nonvertex fetal presentation, and fetal distress. Sixty-nine percent of parous women had previous out of hospital birth experience, and 22% had higher perinatal risk potential to the current pregnancy (e.g., hypertension, assisted vaginal delivery, postpartum hemorrhage, neonatal death/stillborn). Of the 6.6% of parous women who had a previous cesarean section, 93% had a successful vaginal birth after cesarean (VBAC). This shows that the “once a cesarean, always a cesarean” rule does not apply to the vast majority of women.

No infants born at home had vacuum or forceps assisted delivery, four were born in breech presentation, and 46 did not have spontaneous respiration. Thirty-eight of the 46 had some type of resuscitation procedure performed. Only 33 had a 1-minute Apgar score of less than 7 and only 14 had a 5-minute Apgar score less than 7. The majority of women requiring hospital transfer were nulliparous (27%) than parous (5.7%), and a gestational age of 42+ weeks due to meconium passage (17% versus 5.5% clear fluids).
The overall cesarean section rate of the home birth group was a very low 2.3%. Among the 1221 women beginning labor at home, there were five perinatal deaths, but two were excluded because of fetal demise. This left three perinatal deaths, giving a mortality rate of 2.5 per 1000. Two of the three deaths were infants of 42+ weeks gestation with evidence of meconium passage.

When compared to other studies, the intrapartum and perinatal transfer rates were similar, as was the mortality rate. However, a comparison can not be drawn because of the different determinations for ineligibility set by each individual midwife or home birth service. The variation in skill or experience of the participating midwives could also affect the findings. Another limitation of the study was the lack of the comparison group.

This study displays the proper training and skills of midwives because most subjects experiencing perinatal mortality/morbidity and cesarean section deliveries were referred for hospital birth during the antepartum period and also because the mothers experiencing complications during labor were transferred to the hospital with adequate time for medical assessment and discussion of options. The study also shows that a reassessment of the safety of postdate home birth must be done because of meconium passage and the high rate of perinatal mortality associated with it.

Mehl-Madrona and Madrone’s (1997) study was a case-control study which originally planned on comparing physician-versus midwife-attended home birth, but it also came to include valuable information on the questionable subject of home birth for breech, twin, and postdate deliveries. These deliveries are considered higher risk and are associated with a higher mortality rate, yet many midwives in the United States attempt these deliveries at home. The limitations to this study were the potential bias which
resulted from the nonrandom selection of both midwife-and physician-attended and that the data collection procedures varied between the physicians and the midwives.

Two thousand three hundred and thirty births were attended between 1970-1985 by 51 practicing midwives in the United States. Data collection forms were sent out to all midwives and they contained stringent, clear-cut definitions of all terms such as fetal distress, postpartum hemorrhage, etc in order to eliminate bias, which may have resulted from variation in each midwives’ definition of the condition. Midwives recorded their own data and submitted data of all cases, including hospital transfers. This was a potential source of bias, and the researcher did not attempt to significantly decrease this bias because only limited checks were performed on the data submitted. Apprentice-trained midwife-attended cases were also included, thus bringing the combined number to 4361. Some midwives involved did not have a policy of excluding twin, breech, or postdate from home birth.

Thirteen family physicians participated in the study, and they accounted for 4107 home births between 1969-1981. The recording of data from physicians differed from that of the midwives. The physicians’ recording of data was observed and subsequently judged to be reliable. The chief of obstetrics at each physician’s hospital was involved in determining whether any outcomes had occurred and been excluded. None were detected. All physicians used a female labor support professional or doula, usually a nurse or midwife, who arrived during the onset of active labor, thus allowing the physician to come later for the actual delivery. The midwives who attended deliveries came at the onset of labor and stayed throughout the delivery; they usually brought an assistant who functioned as a doula.
Matching was done for age, socioeconomic status, parity, and a medical risk score at 36 weeks (no points were given to breech, twin, or postdate). Computer pairing continued until 1000 matches were obtained. The results were analyzed in three steps 1) calculate the perinatal mortality rate and neonatal resuscitation rate in both groups 2) calculate rates after excluding for congenital lethal anomalies and 3) calculate rates after elimination of breech, twin, and postdates. There was a significant difference between the groups in the number of breech, twin, and postdates, with the midwives attending significantly more. Midwives had more neonatal resuscitation and a higher mortality rate (14 per 1000 versus 5 per 1000 in physicians), but when congenital anomalies, twin, breech, and postdates were removed from both groups, the difference decreased until no significant differences between the two groups remained. For the entire sample of physicians and midwives, physicians had more deaths due to lethal anomalies, whereas the midwives had significantly more deaths of the second twin during labor, death of postdates during labor, death of breech infants during labor, and deaths due to meconium aspiration. The odds ratio for death of infants born at home with one or more of the three conditions under study was 3.1 (95% CI 2.1-12.3).

Bias, if existed, would favor the midwives because they would tend to underreport their adverse outcomes, so this strengthens the direction of the conclusions reached. Adverse outcomes were more commonly reported by the midwives, but this statistically significant difference was not found when twin, breech, and postdates were removed from the sample. The results conclude that breech, twin, and postdate deliveries should not be attempted at home, but it is important to note that births involving twins, breech,
or postdate infants are at a higher risk of complication, regardless of place or method of delivery.

Olsen’s (1997) meta-analysis focused largely on medical interventions while the above studies did not. A meta-analysis of six controlled studies was conducted and the perinatal outcomes of 24,092 selected and primarily low-risk women were analyzed to measure mortality and morbidity, including Apgar scores, maternal lacerations, and other medical interventions. Perinatal mortality seemed to favor home birth, but the odds ratio proved that the difference was not significantly different in the home or hospital group in any individual study, nor in the pooled analysis (OR 0.87 95% CI 0.54-1.41). Apgar scores were significantly lower in the hospital group at 1-minute (OR 0.87 95% CI 0.4-0.64) and at 5-minutes (OR 0.55 95% CI 0.41-0.74). The rates of second and third degree lacerations were significantly higher, with the hospital group reporting approximately 50% more. The hospital group also had statistically significant higher rates of the following medical procedures: induction, augmentation, episiotomy, operative vaginal birth, cesarean section, elective cesarean section, and emergency cesarean section. The general belief is that midwives have better outcomes because they do not take high-risk cases, but as shown above, this is not the case.

1.5.3 Conclusions About Home Birth

Midwives and out-of-hospital birth are supported and advocated by numerous organizations, including the National Women’s Health Network, the Women’s Institute for Childbearing Policy, the National Commission to Prevent Infant Mortality, the World Health Organization, and the American Public Health Association. The APHA adopted the resolution “Increasing Access To Out-Of-Hospital Maternity Care Services Through
State-Regulated and Nationally-Certified Direct-Entry Midwives” on Wednesday, October 24, 2001. The General Accounting Office and the Office of Technology Assessment also support the benefits of low-intervention childbirth approaches. However, the American College of Obstetricians and Gynecologists has placed home birth on the same level as maternal trauma and child abuse.

Home birth is safe. And in order to ensure the continued safety, a cooperative system needs to be in place between midwives, physicians, and hospitals in the event that a referral or transport is necessary. All too often, women attempting a home birth do so without having complete plans in place in the event of a transport because of the lack of support within the medical community. This can cause some midwives and women to wait longer to transport in hopes that the problem will resolve itself or the midwife to literally drop the woman off at the doorstep of the emergency room. Both of these situations are detrimental to the healthy outcome of mother and baby and, in the midwives’ opinion, it is the medical community’s way of “punishing” women who attempt home births.

Even more threatening to the health of women and babies is the case of unassisted home birth. Midwife-assisted home birth is not legal in all states (See Map 1), but women who want home births reside in each and every state. Each year, scores of women become pregnant and make the educated decision to deliver their child at home. That seems to be the easy decision—then they must find a midwife. For the women who do find a midwife they labor and deliver with the comfort and security of having a trained and well-qualified attendant at their side. The ones who don’t find a midwife are left with two choices—have a hospital birth or an unassisted home birth. Most opt for a
Map 1. Legal Status of Midwife-Attended Home Birth

- **Legal**
- **Illegal**
- **Not Legally Defined**

- **Alaska**
- **Hawaii**
hospital birth, but some do attempt an unassisted home birth. The attendant is usually their partner or their mother who learn as much as they can by reading books and watching videos. Some unassisted home births are successful and some are not.

Unassisted home births are increasing in number across the United States and are what threatens the safety of mothers and babies, not the presence of properly trained midwives. If the medical community and the American College of Obstetricians and Gynecologists is so interested in ensuring the safety of mothers and babies, they will take the millions of dollars a year they pour into lobbying interests and use their interests to improve the access to out-of-hospital childbirth because women will not stop having home births, whether assisted or unassisted, just as other women will not stop having hospital births.

Why the medical community is so interested in prohibiting out-of-hospital birth is not known, but there are many speculations one can make. Obstetricians currently have the monopoly when it comes to childbirth and could be threatened by a group of women who produce better outcomes while using fewer interventions and therefore, less money. Maybe they’re concerned with preserving their incomes because if insurance companies realized that obstetricians attending low-risk pregnancies were costing them significantly more than midwives attending low-risk pregnancies, a change in policy could result. (This has happened with Intermountain Health Care which now has a $5,000 deductible for pregnancy/childbirth unless a midwife is the primary care giver.) Or it could be the fear that they don’t know how to deliver babies without the use of all of their interventions—how difficult is it to measure the heartbeat without an EFM and how long will the labor last without Pitocin to speed it up, or how to combat shoulder dystocia without the option of forceps or cesarean section. Many obstetricians would have to
return to medical school and take a class entitled “How to attend deliveries without your tools” and would be taught by midwives. After all, the members of the American College of Obstetricians and Gynecologists did answer a survey on reasons for performing cesarean section with fear of litigation if they didn’t being the most common response and then proceeded to write a different reason in their patient’s charts (American College of Obstetricians and Gynecologist 1985). Midwives are virtually never sued by the clients they attend; rather most suits against them are brought about by the medical community.

From research presented in this first chapter, it is obvious that the practice of obstetrics does not follow evidence-based practice and hospital birth and the interventions so commonly used are not as safe as many believe. In contrast, midwives tend to follow evidence-based practice and home birth is safe when women are attended by midwives and adequately screened and referred out for medical conditions contradictive to home birth. Women should be given the choice of where to deliver, not be forced to choose an option they feel uncomfortable with because of the politics of the state in which they reside. Home birth is not for everyone, but it should be available for those who desire it.

Where to deliver comes down to what women consider to be risk. Is it risky to deliver at home in the extremely rare circumstance that an emergency will occur and minutes are critical to prevent the death of mother or baby or is it risky to deliver in a hospital and be subjected to numerous interventions which have been proven by research to have potentially serious side effects associated with them, just to be in the hospital in the event that an emergency will occur in which minutes are crucial. One must wonder in
the hospital birth situation if the emergency that threatened the life of mother or baby was a direct result of one of the interventions used. Women are told by nurses and doctors that if it is used it in the hospital then it is okay. That statement is both true and false. It is true in the sense that if the intervention causes a complication then the nurses or doctors can apply another intervention to correct the side effect of the original intervention and everything will be fine. It is false in the sense that there are risk factors associated with interventions commonly used in the hospital.

All of these factors can make the decision about place of delivery difficult for some. The decision of where to deliver should be left up to the people directly involved. Home birth with trained midwives is not detrimental to an individual’s health or to public health; rather, it is believed to be beneficial and is supported by numerous studies and by the American Public Health Association and the World Health Organization.
Chapter 2. Home Birth in Louisiana

2.1 Introduction

Midwife-attended home birth has been a legally available option to women in Louisiana since the development of the Midwife Practitioners Act of 1986. Although only a small number of women each year choose to deliver their baby at home, they should not be faced with the challenges and the stigmatism that are commonly experienced by those choosing home birth. Some of the general beliefs concerning home birth found in Louisiana and throughout the rest of the country are that home birth is not safe and that women choosing home birth are not concerned about the safety of their baby. Neither are true and until the general public and the medical community become more educated about the facts concerning home birth, it will only become more difficult to attain. The greatest threat to women choosing home birth is lack of an adequately trained attendant. As midwives are harassed or barred from practice, a growing number of women are faced with the all too real situation of delivering their own baby without the help of a properly trained attendant. This situation is already occurring in Louisiana (Vaill 2001; Ely 2001), specifically north Louisiana where there are no licensed or certified midwives presently or previously residing, and the licensed or certified midwives residing in south Louisiana are not willing to make the drive or take the chance to assist these women.

Midwives practicing in Louisiana are required to achieve specific educational requirements as well as adhere to an established method of practice. Specific disqualifications for home birth are listed in the rules and regulations concerning midwife-attended home births as are medical conditions requiring physician consultation.
All have been established to ensure the safety of women choosing home birth, but also to protect the midwife from situations where she may be tempted to take on a high risk patient. If the rules and regulations are followed, she will feel confident in turning the potential client down for home birth.

This study was conducted using data obtained from all women seen by a cooperating midwife licensed to practice in the state of Louisiana during the years 1986-2000. Cooperating midwives were all midwives currently licensed to practice within the state; midwives no longer practicing chose not to participate.

The results found in this study from data agree with other studies and concludes with them that home birth with a properly trained attendant is safe and provides excellent outcomes for both mother and baby with minimal risk. In this study, Apgar scores for infants were high at both one and five minutes, mortality was low, as were transports, episiotomy, and cesarean section. Every infant born at home was alert and attentive, and was initially breastfed (usually within 30 minutes of birth). Hospital transport was infrequent, with all women transported during labor done so with enough time upon admission to make decisions about potential medical procedures. This was due to the established practice that hospitals be located within an appropriate distance from home birth locations. “Emergency” transports with live-threatening complications were not experienced in this study, and very few are experienced among all women choosing home birth.

2.2 Rules and Regulations Concerning Midwife-Attended Home Births

Midwives in the state of Louisiana are governed under the Louisiana State Board of Medical Examiners. The rules and regulations were adopted in 1986. The midwives
practicing at the time developed the rules and regulations, hoping that it would enhance their style and quality of practice; however, as I will discuss later, this is not what eventually happened. Topics covered in Subpart 2: Licensure and Certification under Part XLI: Medical Professions, Chapter 23 of the rules and regulations include qualifications for license, the examination process, renewal of license, course of study, clinical experience, continuing education, and revocation of license. Subpart 3: Practice of the rules and regulations covers knowledge about community resources, appropriate equipment, screening, medical evaluation, required tests, acceptance of clients, prenatal visits, required physician visits, normal delivery, operative procedures, medications, emergency measures, birth registration, postpartum visits, record keeping, newborn care, unapproved practice, and required physician consultation.

An applicant for licensure as a midwife is required to have a high school diploma, be certified in basic cardiopulmonary resuscitation (CPR), have taken college level classes in human anatomy, human physiology, biology, psychology, and nutrition as well as have completed a course of study in the theory of pregnancy and childbirth and have four personal recommendations. Clinical training is supervised by a midwife and includes

- 100 prenatal visits on at least 25 different women,
- attendance at the labor and delivery of at least 15 live births as an observer or assistant attendant,
- management of the labor and delivery of newborn and placenta for at least 15 births as the primary birth attendant,
- 25 newborn examinations,
• 25 postpartum evaluations of mother and baby in home or hospital within 36 hours of delivery,
• five repairs of lacerations,
• five observations of home births involving high risk obstetric care (this may be waived if the opportunity is not available and the board feels the applicant is otherwise qualified), and
• observation of a complete series of at least six prepared childbirth education classes.

After these requirements are fulfilled, the applicant must pass an examination administered by the State Board of Medical Examiners. Reapplication and proof of continuing education is also required to maintain licensure.

The chapter recording practice is very thorough in that precautions are in place to ensure that clients are properly screened for low risk status, referred out for medical complications, and referred for physician consultation on medical conditions that arise which may or may not be a disqualification for home birth. Before a midwife can accept a client, certain conditions must be met. The client must reside within 50 miles of the services of a backup physician for emergency services and must be found to be low risk status. Initial required tests include GC screen, blood group and Rh, hematocrit or hemoglobin, rubella titer, and urinalysis which is typically done by the client’s backup physician though are not required to be performed by the backup physician. The client and the midwife must develop and implement a plan for consultation with a backup physician; however, sometimes this condition cannot be met. Arrangements must also be made for hospital transport should it become necessary for mother or baby.
Risk factors contraindicative of home birth are listed in the rules and regulations and are generally used for screening of low risk status. The risk factors include

- difficulty controlling hemorrhage with previous deliveries,
- history of thrombophlebitis or pulmonary embolism,
- diabetes,
- hypertension,
- Rh disease with positive titer,
- active tuberculosis,
- syphilis or gonorrhea,
- epilepsy,
- hepatitis,
- heart or kidney disease,
- blood dyscrasia,
- contraction of genital herpes in the first trimester or active genital herpes in the last four weeks of pregnancy,
- contracted pelvis,
- severe psychiatric illness,
- addiction to narcotics,
- excessive alcohol consumption or cigarette smoking,
- multiple gestation,
- gestation less than 37 weeks at onset of labor or gestation greater than 42 weeks by dates and examination,
- non-vertex presentation at onset of labor,
• fetus with congenital anomaly that may require immediate medical attention,
• preeclampsia,
• parity greater than 5 with poor obstetrical history, and
• being younger than 16 or a primipara older than 40.

Conditions requiring physician consultation during the antepartum, intrapartum, or postpartum period are listed in the rules and regulations and are very exhaustive. Conditions of the infant requiring physician consultation are also listed. Antepartum conditions include but are not limited to

• edema,
• significant increase in blood pressure,
• inadequate weight gain,
• development of glucosuria or proteinuria,
• symptoms of vaginitis or urinary tract infection,
• vaginal bleeding prior to onset of labor,
• rupture of membranes prior to 37 weeks gestation,
• anemia,
• polyhydramnios or oligohydramnios,
• severe varicose veins,
• abnormal Pap smear,
• or gestation of 41 weeks by dates and examination.

Intrapartum conditions requiring physician consultation include

• high blood pressure,
• high fever,
• respiratory distress,
• irregular fetal heart rate,
• ruptured membranes without onset of labor within 12 hours,
• meconium or blood stained amniotic fluid,
• non vertex presentation,
• slow progress of labor, delivery, or 3rd stage,
• excessive bleeding, and
• retained placental fragment or membranes.

The postpartum conditions include 3rd or 4th degree laceration, uterine atony, excessive bleeding, lack of voiding within six hours of birth, fever, foul smelling lochia, or weak blood pressure and pulse. Conditions in the infant requiring consultations include

• 5-minute Apgar of 7 or less,
• anomaly,
• cardiac or respiration irregularities,
• poor color,
• jaundice within 48 hours of birth,
• birthweight of less than five pounds or more than nine pounds,
• signs of prematurity, dysmaturity, or postmaturity,
• meconium staining,
• lethargy,
• high fever, and
• lack of urination or passing meconium within 12 hours of birth.
The conditions listed above are not completely inclusive of all possible conditions which may occur, leaving those decisions up to the midwife and the mother as to what action should be taken. In cases where physician consultation is not available the decision is once again left up to the midwife, the mother, and any family involved in the decision making process.

Very few medications are used by the midwife, but several are authorized for use. These include oxygen, local anesthetic for postpartum suturing, vitamin K for bleeding in the newborn, eye prophylaxis for the newborn, and pitocin/oxytocin, but only for the control of postpartum hemorrhage. Emergency procedures allowed include cardiopulmonary resuscitation, episiotomy, intramuscular administration of oxytocin/pitocin for postpartum hemorrhage, or intravenous fluids and medications with the standing order of a physician.

An initial newborn screening is performed by the midwife. The information recorded from this screening includes Apgar scores at one and five minutes, estimated gestational age, reflexes, weight, length, and head circumference. Postpartum care of the mother includes referral for Rh negative mothers, management of 3rd stage delivery, and ensuring the stability of the mother. The mother’s stability is concluded by normal blood pressure, normal pulse and respiration, firm fundus, and normal lochia. Infant stability is concluded by established respiration, normal temperature, and strong sucking. The midwife is required to stay at least two hours postpartum or until the conditions of both mother and baby are stable. A revisit is required within 36 hours of birth and others as deemed necessary. The established pattern by practicing midwives is home visits at days
1, 3, 5, and 7 with others occurring as deemed necessary. A six week checkup is also performed.

When these regulations were first set in place, the midwives did not realize how the medical community could use some of them against the midwives and cause the restriction of practice that is a problem now. The regulation causing problems is subsection 5319 which requires that the client be evaluated by the supervising physician at or near the 36th week. Midwives can have an extremely difficult time finding a physician who will collaborate with them, not because the physician chooses not to, but because of legal issues with the hospital(s) the physician has privileges with. The physician sees the midwives’ clients near 36 weeks and typically back-ups or collaborates with the midwife on all clients until a transport is required. Once transported, the hospital discovers that the physician works with midwives and some have threatened to pull privileges if the professional relationship continues. Lack of physician backup or collaboration has caused numerous low risk women desiring home birth not to be able to achieve their desires or to go farther and plan for an unassisted home birth.

The purpose of the visit by the physician is to ensure that the client does not have a potentially serious medical condition or contradiction that would make home birth dangerous. Discussion has been underway to remove this requirement with the midwives’ argument being that they are qualified to determine medical conditions contraindicative of home birth and appropriately refer the client out. The midwives do not want to eliminate any collaborative or professional relationships that may exist with a client’s backup physician. Rather, they choose to not be required to send their clients to a physician if they do not believe that it is necessary. The argument by those wanting to
keep the visit in place is that either the midwives may recognize a condition and not refer the patient out because they want her to be able to have a home birth, or that they may miss the medical condition. Currently there is not enough data to support the midwives claim that they adequately determine medical contraindications and refer their clients out; nor is there enough to support the opposition’s claim. All referrals have been initiated by the midwife and no transports have occurred because of a missed diagnosis of a medical condition during prenatal care.

Changes to the rules and regulations can be initiated by the midwives. Currently, the midwives are working to make changes to the 36-week physician visit requirement and a few other topics. The proposed changes are to be sent to the Louisiana Advisory Committee on Midwifery where they will be discussed before any approved changes are sent to the Board of Medical Examiners for final approval.

2.3 Purpose of the Study

Initially, this study was planned to be an analysis of all midwife-attended home birth in Louisiana since the legalization of midwifery in 1986. This was not possible because of lack of cooperation from midwives who are no longer actively practicing and those who had moved out of the state and could not be located by the Louisiana Midwives Association. Only actively practicing midwives participated in the study, so the study became a summary of records these midwives will use to reaffirm their statements about good outcomes and the general safety of home birth as they move forward to make changes to the rules and regulations and proclaim their unique style of practice and as they train new midwives to continue performing the standards established
by those before them. Infant and maternal outcomes rather than mortality are the focus of this analysis.

This study will discuss the data from the midwives’ records and will show that currently practicing midwives have outcomes which are as good as or better than that of hospital birth, while still maintaining the safety this generation of women have come to expect during childbirth. Outcomes focused on in this study include cesarean section, transport, Apgar scores, perineal lacerations or episiotomy, breastfeeding, client satisfaction, and complications of labor and delivery. On the topic of infant and maternal mortality, the focus is not placed on infant mortality due to difficulty in follow-up through the first year of life; rather, the perinatal death rate is used. The perinatal death rate is fetal or neonatal deaths which occur from 28 weeks gestation to the 29th day of life. Lack of follow-up would not affect this rate, as midwives perform several visits within the first two weeks and a six-week checkup on new mothers.

2.4 Materials and Methods

As stated earlier, attempts were made to collect data from all midwives who have been licensed and attended home births since the legalization of midwife-attended home birth in Louisiana. Collaboration with the Louisiana Midwives Association (LMA) was used as a way to contact midwives no longer practicing. The LMA provided a list of current and inactive members of their organization; however, many had left in an attempt to establish a home birth practice in a state with rules and regulations that were not as binding. Several other inactive midwives still resided within the state and were contacted. The inactive members were asked if either they would fill out the data collection form for all home births they had attended, or let me come to their home and
fill the forms out. All stated that letting someone else record the data directly from the forms would be a breach of patient confidentiality and denied the opportunity to self-report the data. Since they no longer intended to practice, they felt it would be too time consuming and give them no direct benefits. Self-claiming midwives who do not recognize with the LMA were not invited to participate because they have not met or maintained the licensing requirements set forth by the Louisiana State Board of Medical Examiners and are therefore considered to be untrained assistants.

2.4.1 Participating Midwives

Only four midwives remained after the inactive midwives declined to participate. These four all agreed unanimously to provide their records. Cindy Maxims, LM, CPM, who now resides in Connecticut, was the first to allow me to directly collect information from client records dating back to 1986 and enter it directly onto the data collection sheets. Over the four months of several sporadically arranged all-nighters this required, a second midwife Amie Lejeunes, LM, CPM of Youngsville, self-reported data from births attended since her licensure in 1997. A third midwife Francis Cox, LM of Baton Rouge, who had very recently been licensed and attended only six births, met with me at a coffee shop to have her records recorded. The fourth midwife Mary Jenkins, LM, CPM of Ponchatoula agreed during this time to allow me to come to her home and assist her in the recording of her birth records since her licensure in 1995.

2.4.2 Data Collection

The LMA did not have an established method of collecting records even though one midwife had recently developed a data collection form, in hopes that it would be used regularly. It was not because no one used data entry or data analysis programs. Even
though collection of statistics is required under the rules and regulations, they were fortunate in that the State Board of Medical Examiners had never asked for those statistics.

The data collection sheet designed by the midwife was to be the standard for collection of statistics, but when the midwives realized the amount of time required to go back retrospectively and do all of their births they opted for a shorter form. The original two-page form was shortened to less than one page with separate forms being used for patients who transported, were referred out, or voluntarily left midwifery care. The shortened form was approved by all midwives.

Fields listed on the revised data collection form include maternal prenatal history and demographics, information from 1st stage, 2nd stage, and 3rd stage of labor, and newborn information. Information was also collected on transports, deaths, and clients who were either referred out or voluntarily left midwifery care. Data collected was only for the time periods in which the midwife was the primary caregiver, so if the client transported in 1st stage of labor, information is not available on labor and delivery after admission to the hospital because caregivers changed. The address of the proposed home birth location was also collected, thus allowing the home birth locations to be geocoded and plotted on a map along with hospitals and midwives’ home to show distance of travel for prenatal care and for any potential transports. Each client who initiated care with a midwife was included. The data collection forms are located in Appendix D.

Several clients were contacted after delivery for a phone interview discussing the quality of care, satisfaction with the midwife, and enjoyment of their birth experience. The form used for the interview was designed to be used by the Coalition for Improving
Maternity Services as a means for obtaining the mother’s perception of the services received either by midwife or obstetrician in a home, hospital, or birth center setting. It is located in Appendix E. The intended years for the collection of data were 1986 through 2000, but three births which occurred early in 2001 were also included.

2.4.3 Geocoding and Analysis

The information on the forms was entered into a database created in EpiInfo 2000 and all statistical analysis, exclusive of a logistic regression, was performed in EpiInfo 2000. Geocoding was done in ArcView version 3.2 and certain analyses related to mapping or geographic information systems (GIS) was also done in ArcView 3.2. A logistic regression on transport and predictors of it was performed in SPSS. Quantitative information received from the phone interview was entered into an EpiInfo 2000 database. The interviews were taped and later transcribed.

Geocoding was only performed for births occurring within East Baton Rouge parish (EBRP) because the largest concentration of births (45%) occurred within the one parish and also because women in the surrounding parishes would likely transport to a hospital located within EBRP. EBRP is centrally located with the majority of births occurring within the state and provides a visual representation of the 50-mile radius required for back-up facilities. The success rate for geocoding of addresses was 91%.

2.4.4 Reference Group

The hospital birth comparison group used is not meant to be a direct representation of precise matching between home and hospital birth; rather, it is meant to act simply as a reference. The hospital birth reference group includes deliveries of women residing within East Baton Rouge parish during the years 1996-1998. Certain
records in the hospital birth comparison group were excluded from the general sample in order to make the referenced group as low-risk and similar to the home birth group as possible. Any woman with a medical risk factor noted or who self-reported tobacco or alcohol use was excluded to attempt to achieve a low-risk population sample. Because 97% of the home birth population was white, only the hospital birth records for white women were used. Multiple gestation deliveries and preterm deliveries were also excluded since these are immediate disqualifications for home birth. Age and primipara or multipara status was not adjusted for. Marital status was also not adjusted for due to the change in lifestyle. It is difficult to determine if the woman lacks support from a partner or is lacking in income simply because she is not married. Marital status as reported on the birth certificate does not account for women with life-partners, women who are single by choice and have family as primary support, and lesbian couples. Both home and hospital birth statistics will be compared to the current national rates obtained from vital statistics analyzes put out by the National Center for Health Statistics.

2.4.5 Definitions

The definition used for home birth in this study was any birth in which home was the intended place of delivery at the onset of labor and the woman remained eligible at the onset of labor. This allows for the inclusion of women who transported during labor and ultimately delivered at the hospital, thus allowing for determination of a cesarean section rate among women intending to deliver at home. This gives a more accurate representation of outcomes among home births. Women who began labor prior to 37 weeks gestation developed at that point a risk factor not conducive to home birth and were regarded as a referred out rather than a transport. Preterm delivery is defined as
delivery before the 37\textsuperscript{th} week of gestation; whereas, a term delivery is defined as delivery between 37 and 42 weeks gestation. Gestation beyond 42 weeks is classified as postterm. Low birth weight (LBW) is birth weight of <2500 grams at 37 or greater weeks gestation. Perinatal mortality includes all fetal deaths of 28 or more weeks gestation as well as neonatal deaths which occur within the first 29 days of life. Maternal mortality is defined as deaths occurring during pregnancy or within 3 months of delivery from a condition related to the pregnancy, labor, or delivery. Percentages are based upon available records.

2.5 Results From Midwives’ Database

The results will be arranged by subcategories of sociodemographics, women referred out or voluntarily leaving midwifery care, back-up physician, labor and delivery, complications of labor and delivery, transports, characteristics of infants, mortality, and maternal satisfaction. Geographical information related to the home birth locations are included in the section in which they best apply. Last will be comparisons to the East Baton Rouge parish birth records and national data.

2.5.1 Sociodemographics of Women Choosing Home Birth

Women who choose home birth are not a direct representation of the community in which they live, rather they are more likely to be white, married, multipara, more educated, and of a higher socioeconomic status (Murphy and Fullerton 1998; Woodcock et al 1990; Crotty et al 1990). This was found to be true of women choosing home birth in Louisiana. Of the 284 women who began care with a midwife, most were married (90%), white (97%), and 79% had already had at least one child. Map 2 shows the location of home births in EBRP overlaying the racial distribution. From this map it is
Map 2. Racial Distribution of Home Births in East Baton Rouge Parish

Race = White Normalized by 1990 Population

- Black
- Hispanic
- White

0-0.186
0.186-0.463
0.463-0.702
0.702-0.885
0.885-1
Map 3. Marital Status of Home Birth Clients

Married and Normalized by 1990 Population

- 0.0-0.181
- 0.181-0.306
- 0.306-0.423
- 0.423-0.524
- 0.524-0.661
clear to see that home births are concentrated over areas with higher concentrations of white population. The same can be stated with Map 3 in which home birth locations in EBRP are overlaying the marital distribution. From these maps it is clear that home birth in EBRP is concentrated in areas with more white women and higher marriage rates.

Only 2% of women initiating care with midwives had less than a high school education. Many women in the home birth sample had at least a bachelor’s degree or higher (40%) and over 75% had some college.

Socioeconomic status was not able to be determined because data was not collected on household income. The closest indicator possible for socioeconomic status would have been zip code and/or education level, but these alone are not good indicators. Payment status for midwifery care also was not useful because of the general exclusion by insurance companies on coverage of home birth services. Midwifery services average $1700 and 69.7% of women choosing midwifery care paid the expense out of pocket. Insurance reimbursement covered approximately 23.1% of midwifery services with the remaining 7.2% being done for no monetary compensation or on an exchange of labor system.

Only 79 (28.8%) of women began seeing a midwife during the first trimester of pregnancy. This does not mean that women choosing home birth and midwifery care are less likely to receive prompt prenatal care, rather it reflects a greater understanding of when women change providers or decide to have a home birth. Many women who ultimately choose a home birth begin seeing an obstetrician with the intention of delivering in a hospital, but at some point in their pregnancy change their mind and search out a midwife. Most women (132 or 48.2%) entered midwifery care during the
second trimester with 63 (23%) beginning midwifery care in the third trimester. The range of entry was similar regardless of primiparous or multiparous status.

There was little evidence of perinatal risk among women initiating midwifery care due to the exclusions for home birth listed in the rules and regulations. Because the midwives focus heavily on nutrition and maintaining good health in order to reduce bad outcomes and enhance the mother’s overall experience, they have a general policy of not accepting women who admit to smoking, drinking, or use of narcotics and do not intend to stop during their pregnancy. One woman was referred out at 9 weeks gestation because she refused to quit smoking. Another voluntarily left midwifery care because she smoked. A home visit performed by the midwife in the third trimester allows the midwife to observe the home environment and make referrals based upon the condition. One woman was referred out due to the home environment not being appropriate for home birth.

Parish of residence of women choosing home birth is an interesting yet complicated topic. Most women who chose home birth lived in same parish as the midwife or in a neighboring parish, but there are instances where considerable travel distances were found. From 1986 to 1995 the midwife residing in EBRP traveled extensive distances to attend home births and continued to do so even after midwives in Tangipahoa parish and Lafayette parish began practicing.

Home births occurring with these midwives were exclusively located in south Louisiana with sporadic locations found in north Louisiana and Mississippi. Map 4 shows the parishes with largest occurrences of home births and the location of the home of the three midwives attending the vast majority of these deliveries. EBRP had the
largest number of proposed home birth with 126 followed by St. Tammany (21), Livingston (18), Orleans (15), Lafayette (15), Tangipahoa (13), and East Feliciana (11). Home births were planned in 27 of the 64 parishes in Louisiana and three counties in Mississippi.

While the home births attended by each midwife tend to be centralized around her home, this is not entirely the case. Map 5 shows that the midwife residing in EBRP was no more likely to reduce extensive travel just because two other midwives were practicing in different areas of the state; however, it should be noted that this midwife was more willing than the other midwives to travel the extensive distances required by some clients. All of the births occurring in Mississippi were attended by this midwife. The issue of traveling distance is more of a consideration for the midwife than the woman desiring home birth even though the woman makes the journey more often in her efforts to get adequate prenatal care. The women choosing home birth are typically not concerned with the distance from their home to the midwife’s home because women who choose home birth are more willing to make sacrifices in that area to achieve what they want and are not easily swayed. Being attended by a midwife and having a home birth is more important to them than minor issues like travel distance. The issue the midwives face is one of safety, in that the woman may have a short labor and deliver the baby before she can arrive, or that she will be unfamiliar with transport routes or the standards of practice of the proposed hospital of transport. Home birth in locations farther from the midwife’s home is still legal however as long as the proposed hospital of transport can still be located within the 50-mile radius of the home birth location as required by the rules and regulations.
Map 4. Distribution of Home Births Attended by Midwives Licensed in Louisiana
Map 5. Distribution of Home Birth Locations Attended by East Baton Rouge Parish Midwife in 1990 (Before Other Midwives Were Practicing) and in 1999 (After Other Midwives Began Practicing)
2.5.2 Characteristics of Women Referred Out and Those Voluntarily Leaving Midwifery Care

Of the 284 women that began care with a midwife, 226 (80%) delivered at home, 31 (11%) transported during labor, delivery, or immediately after, 7 (2%) voluntarily left midwifery care, and 20 (7%) were referred out. Of the women who voluntarily left midwifery care all were multipara and white. Five of the seven were married. Fear of pain, fear of complications, and relocation accounted for two each of the reasons given for leaving midwifery care with the last for poor health related to smoking. The woman who smoked was single. The other single woman did so for fear of complications; however, she retained the midwife to serve as a doula and had a natural delivery in the hospital.

Twenty women were referred out, most commonly for medical risks which developed during the pregnancy. All of the women referred out were white, 85% (17) were married, and 80% (16) were multipara. Five (25%) of the referrals were for preterm labor, and four (20%) of the referrals accounted for preeclampsia or eclampsia. One of the women referred out for eclampsia delivered undiagnosed twins. Other noted reasons for referral included multiple pregnancy, breech presentation, congenital anomaly, premature rupture of membranes, smoking, home environment not conducive, seizures, diabetes, failure to comply with back-up physician, and a blood clot which affected the mother’s safety if it dislodged. Another woman unfortunately had to be referred out when the doctor on call at her due date refused to comply with her decision for a home birth and induced her for delivery in the hospital.

The majority of women were referred out fairly late in their pregnancy. Only 6 (30%) were referred out prior to 34 weeks. Eight (40%) were referred out between 34
and 36 weeks and the remaining 6 (30%) were referred out after 37 weeks. The referrals prior to 34 weeks were for smoking (9 weeks), gestational diabetes (18 weeks), diagnosed congenital anomaly (21 weeks), blood clot (22 weeks), and preterm labor (25 and 28 weeks). The women referred out at 34 to 36 weeks gestation were done so for seizures (34 weeks), preterm labor (1 at 34 weeks and 2 at 35 weeks), preeclampsia (35 weeks), multiple pregnancy (36 weeks), premature rupture of membranes (36 weeks), and failure to comply with backup physician (36 weeks). Referrals at term gestation included preeclampsia (1 at 37 weeks and 2 at 39 weeks), on-call doctor refusing to comply with home birth plans (38 weeks), home environment not conducive for home birth (38 weeks), and breech presentation (39 weeks).

After a woman was referred out, if both parties agreed, the midwife maintained contact with the woman and usually functioned as a doula during her hospital delivery. Half of the women who were referred out agreed to this and were followed by the midwife. Of these ten women, 5 had a spontaneous vaginal delivery, 2 had a forceps delivery, and the remaining 3 had a cesarean section. One fetal death due to a congenital anomaly occurred.

This left 257 women eligible for home birth at the onset of labor. There were no significant differences between the age, race, marital status, years of education, and presence of back-up physician between the women eligible for home birth and those not. Women who were eligible for home birth were more likely to be married, but the difference was not significant.
2.5.3 Back-up Physician

Each woman is required by the rules and regulations governing midwife-attended home birth to have a back-up physician. This is one of the most difficult requirements to obtain because of the legal and political aspects involved. However, the difficulty also varied by city of residence. The clients of the midwife residing in East Baton Rouge parish were unable to find physician back-up 41% of the time. Of the 192 clients of that midwife, only 114 successfully found a physician back-up. And of those 114 women, not all of the physician back-ups were aware that they were actually backing a home birth. Some of the women choosing home birth saw an obstetrician during their pregnancy only to leave doctor’s care very late in pregnancy, or call the doctor after delivery and inform them that they delivered the baby at home. The wording of the rules and regulations allows for this situation. The rules and regulations state that a woman must see a physician during the first trimester for blood work and again around the 36th week of gestation. The physician who sees the client is essentially the back-up physician, but many do not realize that they are because there is no paperwork or a binding contract associated with the understanding that they are backing a home birth client. The 36 week visit is the one midwives have difficulty in getting their clients in for, so the client will simply not tell the physician that she is also seeing a midwife and intending to deliver at home. After this visit, the client will inform the physician that she is changing providers or after delivery will tell the physician that she happened to deliver at home. This is not the ideal situation to have, but for many women choosing a home birth, it is the only option they have and they hope that they will not require hospital transport.
East Baton Rouge parish is the location with the lowest rate of physician back-up. All clients of the midwife residing in Lafayette parish had a physician back-up and only 18.2% of clients of the midwife residing in Tangipahoa parish went without a back-up physician. Many clients who lived in East Baton Rouge parish had a back-up physician practicing in a hospital located outside of East Baton Rouge parish; of the 125 proposed home births in East Baton Rouge parish, only 88 (70.4%) planned in the event of a complication to transport to a hospital in the parish. The women choosing to transport outside of East Baton Rouge parish did so because the back-up physician they were able to find practiced at North Oaks in Hammond, a hospital in Lafayette, or River Parishes in LaPlace. This situation is allowed; as long as the proposed location of transport is within a 50-mile radius of the client’s home it is legal. Women residing in or near East Baton Rouge parish who were unable to find a back-up physician would transport to Earl K. Long Hospital in the event that a complication arose.

The acquisition of a back-up physician also varies greatly by time. The years with the highest rate of women being unable to find a back-up physician were 1991 (60%), 1992 (50%), 1993 (76.9%), and 1994 (61.1%). Ironically, these were the years in which home birth was becoming more common for the midwife residing in East Baton Rouge parish and the back-up physician in Lafayette parish was no longer able to continue providing her services. The midwives in Lafayette and Tangipahoa parishes were not practicing at this time. In 1995, the rates of women with no back-up physician went down because the midwife in East Baton Rouge parish found a physician willing to see her clients and the midwife in Tangipahoa parish began practicing and was able to find back-up for the majority of her clients. In 1995, only 27.3% of women did not have
a back-up physician. Unfortunately, 1995 was the only year in which that particular physician backed home birth clients.

In 1996 the midwife in Lafayette parish began practicing and she was able to find a back-up physician to work with. That year, 29.2% of all women did not have a back-up physician, 25% saw a physician in Tangipahoa parish, and all women in or around Lafayette parish choosing home birth had a back-up physician. Only 6.5% of women choosing home birth in 1997 were unable to find a back-up physician and the physician in Tangipahoa parish began seeing more home birth clients. This one physician alone backed 61.3% of the women with the physician in Lafayette backing all clients there. All women in or around Lafayette had a back-up physician. The number of women unable to find a back-up physician was also low in 1998 and 1999 with only 11.8% and 6.7% respectively being unable to do so. In late 2000, the physician in Tangipahoa who was backing many clients in the nearby parishes was forced to either quit backing home birth clients or lose privileges at the hospital he delivered in. He chose to keep his privileges and in 2000, 29.4% of women did not have a back-up physician. At the time of writing, the midwives have not been able to find a physician willing to work with them on a consistent basis, so the number of women without a back-up physician is on the rise again.

2.5.4 Characteristics of Labor and Delivery

Of the 257 women beginning labor at home, 230 (89.5%) delivered at home. A total of 31 (12%) transported to the hospital; four of which occurred after a successful home delivery. Of the women beginning labor at home, 54 (21.4%) were primiparous
and 198 (78.6%) were multiparous. The statistics in this section apply to all 230 women who delivered at home.

Midwives attending home birth do not perform inductions and stimulations are extremely infrequent. Of the women in Louisiana choosing midwifery care and home birth, none had their labors induced in any way and only one woman had her labor stimulated. The stimulation was done with the herb blue cohosh because the labor was particularly long and not progressing. The woman having the stimulation of labor did have a successful home delivery after 48 hours of labor, but required a postpartum transport due to a retained placenta. There is no indication that the blue cohosh caused or contributed to the retained placenta. Because stimulation of labor is a procedure rarely performed by midwives, it is not uncommon to have labors longer than 12 hours and even 24 hours. Many of these labors lasting more than 24 hours are characterized by long latent labors with slow cervical dilation before hard active labor begins. Intervention to reduce the length of labor is typically not needed as long as there are no signs of fetal or maternal distress.

The length of 1st stage was usually fairly short. Almost half of the women (46%) had a 1st stage of six hours or less and 77% lasted 12 hours or less. Ninety-three percent of all labors lasted 24 hours or less. Of the 7% lasting longer than 24 hours, no intervention except for the one stimulation was used. The longest labor on record was 66 hours. The length of 1st stage of labor was different when the women were separated into groups of primipara or multipara. The primiparous women had longer labors. Only 16.7% of the primiparous women had labors which lasted 6 hours or less; whereas,
among multiparous women, 51.6% had labors of 6 hours or less. See Figure 1. The percents of primiparous and multiparous with labors of 12 hours or less were 52.8 and 81.9%, respectively. The longer labor among primiparous women is expected. The difference remained at 24 hours also, with 83.3% of the primiparous women completing 1st stage and 95.7% of the multiparous women having done so. See Figure 2.

![Figure 1: Percent of women completing first stage within the designated period of time](image)

Women who had long labors did not have ruptured membranes the entire time they were in labor. The midwives attempt to keep the total time the membranes were ruptured to 24 hours or less (98.6%). There is concern within the medical community that once the membranes are ruptured, infection is more likely to set in. In order to help prevent an infection from making its way into the uterus, the midwives perform few, if
any, vaginal exams until the mother is in active labor. The midwives also do not
spontaneously rupture the membranes unless they are impeding full cervical dilation or
delivery. The membranes are not ruptured in an attempt to speed up labor. Spontaneous
rupture of membranes (SROM) occurred in 73.4% of all women having a home birth. Of
the 26.6% of artificial rupture of membranes, 28 (50.9%) had membranes ruptured after
active labor was established, 23 (41.8%) of the artificial ruptures occurred during 2nd
stage, and 3 (5.5%) had the membranes ruptured at delivery of the head. Only 1 woman
had membranes artificially ruptured before active labor was established.

Figure 2: Cumulative percent of women completing 1st stage by time
Most ruptured membranes, regardless of SROM or AROM status were for very short periods of time. Thirty six percent of membranes were ruptured for a total of 30 minutes or less and 49.8% for one hour or less. Only 10% of all women had membranes ruptured for more than 12 hours. Meconium staining was present in only 24 (11.3%) of women and only one of these was recorded as being thick meconium staining of the fluid.

![Graph showing percent of women completing 2nd stage within the designated period of time.](image)

**Figure 3**: Percent of women completing 2nd stage within the designated period of time

The 2nd stage of labor was also allowed to progress without intervention as long as fetal heart tones and the mother’s condition remained favorable. Because of this reason, there were several 2nd stages of labor (8.6%) which lasted over 1 ½ hours. Even with the
number of long 2nd stages, most were very short. Twenty-three percent of women
delivered within 10 minutes, 46.9% within 20 minutes, and 66.4% within 30 minutes. A
small percentage of women (5.8%) required two or more hours in the 2nd stage to deliver
the baby. See Figure 3.

When broken down by primiparous or multiparous status, it is clear that
primiparous women, as expected, had longer 2nd stages. Of primiparous women, only
22.2% delivered within 30 minutes and 36.1% within one hour. The percent requiring
more than two hours in the 2nd stage was 22.2. Among multiparous women, 75%
delivered within 30 minutes and 90.4% within one hour. Only 2.1% required more than
two hours. See Figure 4.

![Figure 4: Cumulative percentage of women completing 2nd stage by time](image-url)
During the 2\textsuperscript{nd} stage of labor, the women were allowed to assume whatever delivery position they felt comfortable in. Because of being given a choice and the discomfort associated with the lithotomy position, only 6 women (2.7\%) chose to deliver that way. The most common delivery position was sitting. Seventy-nine women (35.3\%) chose this position followed by 57 (25.4\%) choosing to lie on their side as they delivered the baby. These were the most common delivery positions regardless of primiparous or multiparous status. None of the primiparous women chose the lithotomy position. Data is unavailable to determine if the multiparous women who chose the lithotomy position did so because of a previous hospital birth experience in which that particular position was required.

It is possible that the non-standard use of the lithotomy position contributes to the frequency of home birth women delivering over an intact perineum (Bonfin-Hypolito 1998). The number of women having an intact perineum after delivering with the midwives in Louisiana is further increased by the midwives’ standard practice of not performing episiotomies. Of the 230 women delivering at home, only two (0.9\%) episiotomies were cut. The two women who had episiotomies had fairly long 2\textsuperscript{nd} stage labors (1.5 and 6 hours). Both infants weighed over 9 pounds and had 5-minute Apgar scores of 9. Neither episiotomy extended.

The rate of perineal laceration was also low. An intact perineum was noted in 54.5\% of all women. A note needs to be made that the midwives involved in the study typically consider what they call “skid marks” as a 1\textsuperscript{st} degree perineal laceration. “Skid marks” are minor abrasions which occur from the baby’s head sliding over delicate tissue. It is not a laceration in the sense of a tear requiring suturing, but is an annoyance.
to the mother. First degree lacerations were noted in 81 (35.8%) of all deliveries with 2\textsuperscript{nd} and 3\textsuperscript{rd} degree lacerations accounting for 19 (8.4%) and 2 (0.9%), respectively.

![Figure 5: Intact perineum or degree of laceration](image)

Lacerations of all degrees were more common among primiparous women (p=0.0001), but were less likely to be sutured (70.8% versus 82.6% among multiparous women). The lack of suturing leads to the assumption that these lacerations were “skid marks” and not actually a tear. Both 3\textsuperscript{rd} degree lacerations occurred in primiparous women. The other major difference between primiparous and multiparous was the difference between intact perineum and 1\textsuperscript{st} degree lacerations. Only 11 (29.7%) of the primiparous women had an intact perineum and 21 (56.8%) had a 1\textsuperscript{st} degree laceration; whereas, among multiparous women an intact perineum was reported in 111 (59.4%) and
a 1\textsuperscript{st} degree in 60 (32.1\%) of the deliveries. The rates for 2\textsuperscript{nd} degree lacerations were similar with 8.1\% among primipous women and 8.6\% among multiparous women. Primiparous status can be considered a risk for perineal laceration (OR=3.45, p=0.0001). The delivery position associated with the lowest rate of intact perineum was sitting. Thirty-eight women (48.1\%) delivering in this position had an intact perineum, 33 (41.8\%) had a 1\textsuperscript{st} degree tear, 7 (8.9\%) had a 2\textsuperscript{nd} degree tear, and 1 (1.3\%) had a 3\textsuperscript{rd} degree tear. Weight of baby was not found to be a risk for perineal laceration. When broken down into two groups of $< 9$ pounds and $\geq 9$ pounds and the odds ratio was found to be 1.09 for women delivering a baby weighing over 9 pounds.

Delivery of the placenta in the 3\textsuperscript{rd} stage of labor is marked by a concern for postpartum bleeding which may occur before, during, or after delivery of the placenta. Most women (94.1\%) had a spontaneous unassisted delivery of the placenta. Only 12 (5.4\%) required an assisted placental delivery and only one placenta had to be manually removed. There was no significant difference in delivery method of the placenta regardless of primiparous or mulitparous status. The difference in primiparous or multiparous status was found in the amount of time needed for delivery of the placenta. Of all women, 45 (20.4\%) delivered the placenta within 10 minutes, 120 (54.3\%) within 20 minutes, 165 (74.7\%) within 30 minutes, and 217 (98.2\%) within one hour. Four women (1.8\%) required more than one hour for delivery. Primiparous women required more time for delivery of the placenta at 10 minutes (17.6\% versus 21.1\% among multiparous), at 20 minutes (50\% versus 55.7\%), at 30 minutes (64.7\% versus 76.8\%), at one hour (94.1\% versus 98.9\%), and at more than one hour (5.9\% versus 1.1\%).
Midwives consider 500cc of blood loss or less to be an acceptable amount. Over 500cc of blood loss begins to pose the threat of excessive postpartum bleeding or postpartum hemorrhage with the latter potentially being life-threatening. Only 8.8% of all women delivering at home had a blood loss which exceeded 500cc and only 3 (1.4%) lost more than 750cc of blood. Two of the women with excessive postpartum bleeding were transported to the hospital because of concern for postpartum hemorrhage. One of the postpartum bleeds resolved before admission to the hospital and the other was determined to be blood loss from a perineal laceration.

2.5.5 Complications of Labor and Delivery

A total of 40 complications during labor and delivery were noted. Complications of labor and delivery were more common among multiparous women than primiparous women. Complications occurred in 16.7% of multiparous women versus 12.9% of primiparous women. The most common complication was shoulder dystocia, accounting for 19 (47.5%) of all listed complications, followed by excessive postpartum bleeding (7, 17.5%). Among primiparous women, shoulder dystocia was noted in the records of 3 (42.8%) and postpartum bleeding or prolonged labor was noted in 2 (28.6%) records for each. Among multiparous women, shoulder dystocia was noted in 16 (48.5%) of the records with postpartum bleeding being noted in 5 (15.5%). Precipitous labor and precipitous delivery combined were noted in 5 charts. Prolonged labor was listed as a complication in only 2 (6%) records. Other noted complications among mulitparous women included face presentation, nuchal arm, OP presentation, and premature rupture of membranes. The only complications requiring transport to the hospital were the two postpartum bleeds noted earlier.
The total complication rate of all women delivering at home was 17.4%. Shoulder dystocia occurred in 8.2% of all home births and excessive postpartum bleeding was noted in only 3%.

2.5.6 Transports

Hospital transport occurred in 31 (12.1%) of the 257 women beginning labor at home. There were no infant transports. Of the transports, 27 (87.1%) occurred before delivery and 4 (12.9%) occurred after delivery. Four (13.8%) of the transports occurred after rupture of membranes but before labor began, 18 (58%) of the transports occurred during the 1st stage of labor, 4 (13.8%) occurred during 2nd stage, 1 (3.2%) occurred during 3rd stage, and the remaining 2 (6.4%) occurred in the postpartum phase.

Transports among primiparous women were more likely to occur at some point in the 1st stage of labor (15 (79%) versus 5 (55.6% of multiparous women) and multiparous women were more likely to transport in 3rd stage or postpartum (3 (33.3%) versus 1 (5.3%) among primiparous women). See Figure 6. Of the primiparous women, 35 (64.8%) delivered at home and 19 (35.2%) were transported to the hospital. The multiparous women had more successful home births with 187 (94.4%) delivering at home and only 11 (5.6%) transporting to the hospital. All of the women who transported antepartum or intrapartum arrived at the hospital with enough time to be involved in decision-making processes. There were no women who arrived at the hospital in a condition that prevented them from being an active participant in the birth process. Presence or absence of a back-up physician did not have an effect on the likelihood of a woman to transport. Of the women transporting to the hospital, 32.3% did not have a
back-up physician compared to 32% delivering at home who did not have a back-up physician.

![Graph showing initiation point of hospital transports.]

**Figure 6: Initiation point of hospital transports**

The most commonly noted reason for transport was failure to progress. This reason was listed in 13 (41.9%) records. Breech presentation caused 4 (12.9%) of the transports. Cephalopelvic disproportion and excessive bleeding followed with 3 (9.7%) listings each. Fear and exhaustion accounted for 2 (6.4%) each and need for pain medication, suturing, retained placenta, and transverse arrest accounted for 1 (3.2%) each. The majority of women transported were primiparous (19, 63.3%). Primiparous
status is a risk factor for transport (OR: 9.2). Transports due to failure to progress were much more common among primiparous women (10, 52.6% of all primiparous transports) than multiparous women (2, 18.2% of all multiparous transports).

![Graph showing place and type of delivery among women beginning labor at home](image)

**Figure 7:** Place and type of delivery among women beginning labor at home

Of the women transported, 15 (48.4%) had a vaginal delivery and 16 (51.6%) had a cesarean section. The total cesarean section rate of all women attempting a home birth was 6.2%. Women were more likely to have a cesarean section than a vaginal delivery for transport reasons of failure to progress (62% versus vaginal delivery 30.8%), and cephalopelvic disproportion (100%). Breech deliveries were usually vaginal with 3
(75%) being so versus only 1 (25%) resulting in a cesarean section. When broken down by primiparous status, 12 (22.2%) of all primiparous women attempting a home birth were delivered by cesarean section versus only 3 (1.5%) of all multiparous women. See Figure 7.

Two transports were considered to be an emergency at the time in which the decision was made. One of these emergency transports was for excessive postpartum bleeding. This was the only transport to the nearest hospital of Lane Memorial in Zachary rather than the planned hospital of North Oaks in Hammond. The bleeding resolved prior to admission. The other emergency transport was because of mild bleeding during labor and a suspected placental abruption. The woman did not have a back-up physician and upon admission to Earl K. Long Hospital in Baton Rouge the doctor was forceful and rough in the examination of the patient. Shortly after, the placental abruption became more severe and hemorrhaging occurred, thus resulting in an emergency cesarean section.

Transport distance to the hospital is one of the major arguments the medical establishment has against home birth. The response to the argument posed by the medical community is that at some point during labor, if a woman plans a hospital delivery, a transport to the hospital is required not just by the woman, but also by her chosen physician. A woman choosing a hospital birth must drive to the hospital once labor begins and not all of them make it before delivery. From the time that labor begins and the woman arrives at the hospital, complications can arise. There is also the consideration of the physician having to drive to the hospital to attend the delivery. Smaller hospitals do not always have an obstetrician on staff to attend the delivery.
chosen physician does not make it on time, nor do they typically have an anesthesiologist on staff should an emergency cesarean section be required. Just because a woman plans to deliver at a hospital does not mean that should a complication arise it will be treated promptly.

The rules and regulations state that all home births must occur within a 50-mile radius of a facility appropriately equipped to handle medical emergencies. This requirement is very easy to achieve. All home births occur within a 50-mile radius of a hospital although some proposed transport locations are outside of a 50-mile radius. In these situations, if the transport was deemed an emergency the woman would go to the nearest facility. The midwives attending home births are adequately trained to recognize and respond to potential complications.

To provide a visual representation of home birth and transport hospital locations, all proposed home births in East Baton Rouge parish were geocoded using street address. Map 6 is a map representing locations of attempted home births and their respective outcome of successful home birth or transport. The women living in East Baton Rouge parish planned, in the event of a complication, to transport to either Woman’s Hospital, Earl K. Long Hospital, Baton Rouge General Hospital on Bluebonnet, Lane Memorial Hospital, North Oaks Hospital, River Parishes Hospital, or a hospital in Lafayette parish. North Oaks is located in Tangipahoa parish and River Parishes is located in St. James parish. Map 7 provides a visual representation of proposed transports to hospitals located in East Baton Rouge parish. Most proposed transports were to a hospital located within the parish and those planning to transport outside of the parish typically did so because their back-up physician practiced at one of the other hospitals. As stated earlier, if a
Map 6. Location of Women Having a Home Birth or a Transport
Map 7. Proposed Transport Locations of Home Births in East Baton Rouge Parish

Lane Memorial, Earl K. Long, Woman’s, Baton Rouge General Hospital in Other Red Parish
serious complication would have occurred the transport would have been to the closest facility.

Map 8 provides a representation of the home birth locations which required a hospital transport and are color coded to represent which hospital the woman transported to. The woman with the proposed transport location of River Parishes Hospital in St. James parish did not transport, so it is not included. Map 9 shows which hospitals fall within a 50-mile radius of home birth locations in East Baton Rouge parish. For the hospitals in East Baton Rouge parish, the radius circles begin on the representing dot and go out to represent the area encompassed by the 50-mile radius. For the hospitals outside of East Baton Rouge parish, the radius circle begins in the center of the parish and extends outward. The only hospital of transport which is not within a 50-mile radius of East Baton Rouge parish is located in Lafayette parish. The woman transporting to this facility (the blue dot on map 8) was not far from the 50-mile radius circle determined by using the center of the parish as a starting point. The transport to this hospital occurred greater than 2 hours postpartum and was only done because the woman had a 2nd degree tear and the newly practicing midwife did not feel comfortable suturing the tear. The woman was calmly taken to the facility so that the back-up physician could suture the tear and returned home shortly afterwards.

A logistic regression was performed to determine significant predictors for transport. Risk factors typically associated with obstetric complications include teen or advanced maternal age, low socioeconomic status, inadequate social support during labor (typically measured by marital status), primipara or grand multipara status, smoking or alcohol/drug abuse, race of black, and late entry into prenatal care. The
Map 8. Actual Transports and Hospitals of Destination

North Oaks
Lafayette
Baton Rouge General
Lane Memorial
Earl K. Long
Woman’s
Map 9. 50-Mile Radius Circles Originating From Hospital of Transport
dependent variable in the regression analysis was place of delivery and the independent/predictor variables were age of mother, midwife attending delivery, primipara status, presence of consulting back-up physician, and marital status. Age groupings were 18-24, 25-34, and 35 or older.

Primipara status (p<0.001) was found to be the only significant predictor of transportation. This is expected since the woman has not personally experienced the emotional and physical strains of labor and because the pelvis is considered “untried”. The significance levels were obtained from the likelihood ratio tests output. Significance levels for the other predictors in the regressions were 0.349 for age, 0.607 for midwife attending delivery, 0.681 for presence of consulting back-up physician, and 0.820 for marital status.

For verification of adequate results on the regression analysis outcome the Wald statistic and the group allocation were used. The Wald statistic tests whether a coefficient is 0 and is based on a chi-square distribution. The Wald statistic is the square of the ratio of the coefficient to its standard error. The Wald statistic for primipara status was 26.992 with a significance of <0.001. It was the only Wald statistic to give a significant result. The correct predicted classification of the group allocation assesses the goodness of fit. The percentage classified correctly by the regression equation was 89.5%, an adequate classification.

2.5.7 Characteristics of Infants

Information given here will exclude that of an anencephalic infant which was born at 32 weeks gestation weighing 3lbs 2ozs. The congenital anomaly was determined prior to delivery and the couple chose to deliver at home regardless of the diagnosis,
because the congenital anomaly is untreatable and the family did not want the inevitable death postponed with medical intervention. The back-up physician agreed.

Figure 8: 1-minute Apgar scores of infants born at home

Infants born at home were healthy with good Apgar scores and average to above average birth weight. No infants were transported to the hospital for complications, and fetal heart tones remained good during the course of labor and delivery; therefore no women were transported for suspected fetal distress. The infants born at home ranged from 37 to 42 weeks gestation with 161 (72.8%) being 37 to 40 weeks gestation and the remaining 60 (27.2%) being 41 or 42 weeks gestation. The cutoff for home delivery on the postdate end of gestation is 42 weeks, so all babies were born before the potential complication of meconium passage becomes more common. Evidence of meconium
passage was only present in 24 (11.3%) with only 1 being heavy meconium staining of the waters.

Apgar scores among the infants were very high, with 112 (49.8%) receiving a 1-minute Apgar score of 9 or 10. Only 20 (8.9%) of the infants had a 1-minute Apgar score of 6 or less. At 5 minutes the Apgar scores were even more impressive, with 136 (60.2%) of infants receiving a 10. At 5 minutes the lowest Apgar score given was a 7 and only 2 (0.9%) infants received that score. A 5-minute Apgar score of 8 was given to only 9 (4%) infants and a score of 9 was given to the remaining 79 (35%).

None of the infants were small for gestational age or low birthweight rather most were, by accepted standards, large for gestational age. A birthweight of 2500 grams (5
lbs 8 ozs) is the cutoff for low birthweight, and 4000 grams (8 lbs 12 ozs) is on the other end for average birthweight of term infants. Of the records available for home birth infants, 153 (68.9%) fell between 2500 and 4000 grams with the remaining 69 (31.1%) weighing more than 8 lbs 12 ozs. Sixty-three (28.3%) weighed 9 lbs or more and 17 (7.6%) weighed 10 lbs or more. The largest recorded birth weight was 11 lbs 6 ozs. The breastfeeding initiation rate was 100%. Most of the infants (69.3%) nursed within 30 minutes of delivery and by 1 hour after delivery, 96.4% had nursed. No abnormal conditions of the newborn were noted.

Figure 10: Weight of infants born at home
2.5.8 Mortality

The perinatal mortality rate for infants whose mothers qualified for a home birth at the onset of labor was 11.7 per 1000. There were 3 perinatal deaths among women intending to deliver at home, all due to congenital anomalies. One of the infants who died was born at home. The other 2 died in a hospital after the mother was transported. The death of the infant born at home was due to anencephaly. One of the infants born in the hospital died due to complete anomalous pulmonary venous return. The cause of death for the third was not specified; however, it was due to a congenital anomaly. One woman who was referred out for premature labor also delivered an infant who died due to a congenital anomaly, but it was not recorded as a perinatal death because the woman was not eligible for home birth at the onset of labor. There were no maternal deaths.

2.5.9 Maternal Satisfaction

Several women were contacted after their successful home birth to discuss their feelings about the birth experience and how they were treated by the midwife. Discussions with these women reinforced the above stated facts that midwives provide continuous emotional and physical support while allowing the woman to choose who she wants to be with her during labor and delivery. Birth plans were consistently followed and the woman’s opinions and desires were respected. During labor, the women were allowed to eat, drink, and move freely; and the midwives provided several options to help the women cope with the sensations of labor. After delivery, the baby was placed on the woman’s body and remained there until the woman wanted to let someone else hold the baby. Women who needed assistance with breastfeeding received it. At the time I talked to the women, most were still breastfeeding, and among those who had stopped, the
shortest length of time the baby received breast milk was one year. Satisfaction ratings were very high; only one woman did not rate her experience as a 10 and all said that the actual experience either met or exceeded their expectations. The comments women made about their feelings regarding the birth, their midwife, and any previous hospital birth experiences are powerful and some are included below.

Emma stated that you feel more in control during home births because “it [is] a completely different situation because the midwife’s coming into your house to help you. You’re not going into the hospital to be a patient. It’s more like she’s there as a guest. The entire dynamic is different” (Gleiser 2001). Another stated that “she [the midwife] would give suggestions and then she would follow it with ‘what do you want to do’” (Poirier 2001).

All of the women were very pleased with their midwife; Callie stated that “I think what she does is one of the most wonderful things a human being could do for another” (Smith 2001) and Cynthia said “I hope she is still being a midwife when I have my second one because I enjoyed the experience so much” (Curtiss 2001). Kali has had several midwives as well as an obstetrician and states this about her feelings towards them:

“my doctor was very sarcastic…and it’s so totally different with midwives…I’ve had 5 midwives before Mary and every one of them was just like Mary as far as how…they treated me, respecting what I want, how I want the birth to go, respecting my intelligence” (Prichard 2001).

Some discussed how they ended up forming a relationship with their midwife. “It was more like a relationship; it wasn’t like going to visit a doctor. It was very personable and one on one; more like a friend coming over to help you out than a clinical type situation” (Curtiss 2001) and “Amie is a wonderful person and she does wonderful
births…she will be a part of our family for the rest of our lives” (Hinken 2001) were two views on relationships with midwives.

One woman said “I’m so empowered by having had these great births that I’m just not vulnerable in that way” (Smith 2001) when asked about whether the midwives used on her any of the standard procedures associated with a hospital birth (these included IV, withholding food or drink, amniotomy, or episiotomy). Another woman who was planning a home birth at the time the back-up physician had to stop working with midwives was vocal in the problems with physician backup.

“The only concern I have is the way it’s set up for our midwives, them not having a lot of support, especially with the back-up physician; by law they have to have a back-up physician and I’m glad that they have that because they’re needed; however…physicians don’t support midwives. So there’s a law that’s created, but no one’s helping them to keep it enforced…I want my daughter to be able to do this and I had to do it in kind of a sneaky way for my second one…they have a law supporting them [to be able to practice] that does not support them. It’s frightening for me as a woman who’s delivered twice [at home] and I could again in the future. I want to be able to deliver at home. It’s a right” (Landers 2001).

When asked why they chose to have a home birth one woman simply said “it’s safer and healthier than the hospital alternatives” (Smith 2001) and another said “hospitals are for sick people and it [home birth] seemed the way to go…it made more sense to deliver at home than in a hospital” (Poirier 2001). Cynthia, a first time mom, said

“I like the aspect that I could control what went on, who could be in there, the pictures I could take and I knew for a long time that I wanted to have a natural delivery, no anesthetics and nothing invasive and I knew that having it at home would probably be the best way to assure that would happen” and when asked if she considered delivering anywhere else she said “no” (Curtiss 2001).
Among women who had previous hospitals experiences, the answer to that question usually tended to provoke more vivid responses of their displeasure with previous experiences. Some responses were simple such as Callie’s: “my first birth was in the hospital and it was a good birth considering it was in the hospital, but still some things were done that weren’t right and I knew that and wasn’t happy” (Smith 2001), Emma’s: “because after my son’s birth I wasn’t going anywhere near a hospital again if I were pregnant” (Gleiser 2001), and Miranda’s: “I much preferred laboring at home than at a hospital. I was more comfortable and labor went a lot easier” (Hinken 2001).

Two women’s reason for choosing home birth was more emotional as they discussed their displeasures with previous hospital births.

“Because my hospital experience was horrible…it was supposed to be natural. First thing he does was break my water. I didn’t know what he was doing. I was young…He said okay you’re going to feel a warm gush and I said why and he said well because I just broke your water and I was like why did you break my water—I told you I wanted to go natural and he said well it’s going to speed things up, and everything out of his mouth, he was a jerk. Absolute jerk. To the point that he did not believe me when I said the baby was coming, so he was not dressed, he wasn’t scrubbed. He was standing there beside me with his green clothes in his hand and told me to push and I pushed and she came flying and he jumped and caught her in the green clothes” (Prichard 2001).

“With my son, when I had my first delivery they took him away from me. [I] didn’t get to breastfeed him right then…They had him in the incubator—he was like a baked potato. He was red and so hot…12 hours they had him away from me…and then they had already fed him. They had given him a bottle. They didn’t want to take him out [of the nursery]…it was a mess. And then with the second one the doctor insisted on inducing labor; they kept turning up the Pitocin, wouldn’t check on me, so finally I called the nurse and said the baby’s coming and she said oh no she’s not and I said you’d better look, and sure enough they delivered her. The doctor was furious the nurses had to deliver my baby because they weren’t checking on me. I said I’m not doing this again. I’ve used 2 strikes and you’re out—not 3. So that’s why I chose to go with home delivery” (Fresley 2001).
These kinds of experiences occur in hospitals across the country because the woman is not in control of her birth experience. Unless she is willing to go against the system and choose home birth as these women did, or become more educated about birth and the options available to her, she cannot be guaranteed a better birth experience. However, many women who have experiences like this do not realize that they were treated badly until they begin educating themselves about childbirth practices and interventions, such as in the case of one of the home birth client’s acquaintances. The home birth client is a La Leche League (LLL) instructor and helped a woman who was having difficulty breastfeeding. During the process of helping the woman establish successful breastfeeding, she inquired about how the birth went. This is the LLL instructor’s narrative of the woman’s initial perception of how she was treated, and how it was different after she became educated about her options:

“[She] had her first baby in a hospital and was happy [with the way she was treated]—she thought it was great even though she was induced a few weeks early and that her baby ended up in NICU and she fought for months to establish a successful breastfeeding relationship because she nearly hemorrhage to death because he pulled on the cord and ripped her placenta and had to go up and manually extract it. She was totally happy and it’s a delicate thing pointing out some of those risks. And she did, during her [second] pregnancy, when I was giving her things to read—she thought Oh my gosh, that wasn’t good, that’s not what I want again and she still chose a hospital birth, but had a different experience. But she knows more now and she didn’t subject herself and her baby to all those risks” (Smith 2001).

During personal interviews with women who delivered in a hospital, similar comments of being happy with the experience were given despite the women responding that they were denied food and drink, the nurse was in and out of their room, they had continuous fetal monitoring, they had their labors stimulated or induced, having to close their legs so the baby wouldn’t be born before the doctor got there, being required to
deliver in the lithotomy position, and others. Following is an example of how women rate their experience as excellent, but when asked specific questions give responses which are negative.

At the beginning of the interview, Cassidy, a first time mother, rated her experience as a 10 on a scale of 1 to 10. She had a forceps delivery. During the course of being asked specific questions, her opinion changed as she responded that she did not understand the informed consent and it was not further explained, that the staff did not respect her wishes, and that she did not have continuous labor support. Continuous EFM was used and she was restricted to bed. She was not allowed to deliver in any position other than lithotomy even though she asked to. During labor she was denied food and drink and after the baby was born, she experienced initial and extended separation from her newborn. She also acknowledged that she was not specifically informed of risks involved with procedures (Brin 2001). Several other examples similar to this could be given from interviews done with women having hospital deliveries.

2.6 Comparisons to East Baton Rouge Records and National Data

Comparisons made to the East Baton Rouge parish records are, as stated previously, for the deliveries of women residing in East Baton Rouge parish. These records were further grouped to be women of low-risk status and similar to the home birth records. After the separation of white women meeting the criteria of low risk status, singleton pregnancy, and full term delivery there were 6589 records available. The information collected and available from the vital statistics’ birth certificate record was not as complete as that available from the Louisiana Midwives Association’s database and some of the rates attained from these records were extremely different from reports in
the literature and from the CDC. Since the trends provided by the National Center for Health Statistics include all births in the country, of which 99% are in the hospital (Martin et al. 2002), a conclusion can be made that the national rates apply to hospital birth records; however, this data includes women who would not be considered by the selection criteria to be low-risk.

A note needs to be made that differences in prenatal care existed between the home and EBRP hospital births groups as well and would also have an effect on outcomes. Women choosing home birth were provided prenatal care by the midwife, and prenatal visits among midwives are longer than those by obstetricians and typically go into more depth about topics such as nutrition, personal expectations of labor and delivery, controlling stress during pregnancy, comfort measures to deal with labor pains, breastfeeding, and exercise. It is common for prenatal visits with the midwives practicing in the state to last at least an hour. Prenatal visits by women choosing hospital birth in East Baton Rouge parish (EBRP) are performed by an obstetrician and rarely last more than 20 minutes.

Information that I deem significant relating to pregnancy and childbirth outcomes that were not included in the birth certificate records are amniotomy, episiotomy, epidural anesthesia, perineal lacerations, assisted delivery of the placenta, shoulder dystocia, and breastfeeding initiation. The records in which the information was not supported by reports in the literature and from the CDC include rates of induction or stimulation of labor, certain complications of labor, cesarean section, and operative vaginal delivery; however, all rates discussed below will be compared to national trends.
Obstetric procedures were much more common among women delivering in the hospital. Electronic fetal monitoring was recorded in 96.7% of the records. Because of this these women were restricted to bed and unable to move and/or change positions freely during their labors. No women who delivered at home had electronic fetal monitoring; however, some women who transported during labor would have been required by the hospital personnel to have EFM done. The exact number is not known; however, even if all women who transported during labor received EFM, only 10.5% would have received it. Nationally this rate is 84% (Martin et al. 2002). The induction and stimulation rates found in the vital statistics birth certificate records were only 1.3% for each. This information does not correlate with national records. A recent study found that the induction rate in the United States more than doubled in a decade, from 9.5% of all births in 1989 to 19.4% of all births in 1998. When broken down by state, the state with the lowest rate was Hawaii with 10.9%, much higher than the rate found here (Zhang et al. 2002). Work is underway to obtain a more accurate representation of the induction and/or stimulation rate in East Baton Rouge parish using medical insurance records.

The number of women in the EBRP hospital birth group with a noted complication of labor was strikingly low, leading to a conclusion that these are also underreported. One example of the underreporting is for abruptio placenta and placenta previa; EBRP records stated that combined they only occurred in 10 of the 6589 women. National records compiled by the National Center for Health Statistics found a rate of 5.5 per 1,000 for abruptio placenta and a rate of 3.2 per 1,000 for placenta previa (Martin et al. 2002), much lower than the rate in EBRP of 0.3 per 1,000 for abruptio placenta and
1.2 per 1,000 for placenta *previa*. Another example is with precipitous labor or prolonged labor or dysfunctional labor—of all three only 14 were noted for a rate of 2.1 per 1,000 among EBRP women. Nationally the rate for dysfunctional labor alone is 28.2 per 1,000 (ibid.). Because only 7.45% of women were noted as having a complication during labor or delivery by vital statistics records, further work is needed to assure the accuracy. It is also interesting to note that shoulder dystocia, the most frequently listed complication in the home birth records, was not an individual category in the vital statistics records. Excessive postpartum bleeding/hemorrhage, the second most commonly noted complication among home birth women, was rarely noted in EBRP records under the designated category of other excessive bleeding.

![Figure 11: 1-minute Apgar scores given to infants born at home and in the hospital](image)

Figure 11: 1-minute Apgar scores given to infants born at home and in the hospital
Abnormal conditions of the newborn were only noted in 58 cases of the EBRP records. The most commonly noted conditions were seizures (18 of 6589 or 2.73 per 1,000) and assisted ventilation (12 of 6589 or 1.82 per 1,000). The national average for assisted ventilation is 31.4 per 1,000, well above the rate given in records in EBRP. Neither of these conditions was noted in the home birth records.

Figure 12: 5-minute Apgar scores given to infants born at home and in the hospital

Apgar scores for infants born in the hospital were good, but were not as high as those among infants born at home. In the home birth group, the most frequently occurring 1-minute score was a 9 (41.8%), and in the hospital birth group, the most frequently occurring 1-minute score was an 8 (75.26%). A 1-minute score of 9 was given to 16.2% of the hospital birth group. See Figure 11. At 5-minutes, the most frequently given score to the hospital birth group was also one point below that of the home birth
group. A 10 was given to 60.2% of the home birth group and a 9 was given to 90.9% of the hospital birth group. Only 3.81% of the hospital birth group received a 5-minute Apgar score of 10. See Figure 12.

High birth weight is associated with better nutrition and general health of the mother and low birth weight is an area of concern because of the higher rates of mortality among infants. Of the selected low-risk group of women delivering in a hospital at full-term gestation, 107 (1.6%) of infants were of low birth weight. The majority (84.5%) were between 2500 grams (5 lbs 8 ozs) and 4000 grams (8 lbs 12 ozs). Among those women delivering at home, 39.2% of babies weighed more than 4000 grams; whereas, in the hospital birth group, only 13.87% of babies weighed over 4000 grams. The home birth group gave birth to larger babies without an increase in cesarean section or operative vaginal delivery. Nationally among white women, 6.6% of infants were low birth weight and 11.7% weighed more than 4000 grams (ibid). See Figure 13.

The cesarean section and operative vaginal delivery records obtained from the vital statistics records are also lower than expected. The records concluded a cesarean section rate among the women choosing hospital birth to be 10.1% and the operative vaginal delivery rate of 3.7%. The cesarean section rate found in the EBRP records is lower than the Healthy People 2000 and 2010 goals of 15% established by the CDC. The difference in cesarean section rates between primiparas and multiparas in the home birth group and not in the hospital birth group is interesting. This may be due to more multiparas with primary cesarean sections choosing a repeat cesarean section, but data is not available to make this determination. The national cesarean section rate has ranged
from 21% to 23% between 1989 and 2000 and the operative delivery rate has ranged from 7% to 9.5% between 1994 and 2000 (ibid). See Figure 14.

The preterm delivery rate was also calculated. After calculation of the above figures, the selection criteria for gestational age was included for analysis. EBRP records showed a preterm delivery occurring in 4.95% of all low-risk women in the hospital birth group sample. If the women in the home birth group who were referred out for preterm labor would have been included and would ultimately have delivered preterm, then the

* Hospital represents EBRP data and national represents national vital statistics records for the year 2000

Figure 13: Birth weights of infants*

The preterm delivery rate was also calculated. After calculation of the above figures, the selection criteria for gestational age was included for analysis. EBRP records showed a preterm delivery occurring in 4.95% of all low-risk women in the hospital birth group sample. If the women in the home birth group who were referred out for preterm labor would have been included and would ultimately have delivered preterm, then the
preterm delivery rate would have been 1.9%, which is much lower than the hospital reference group. The national rate given for white women was 10.4% (ibid).

* Hospital represents EBRP data and national represents national vital statistics records for the year 2000

Figure 14: Place of delivery and corresponding method of delivery*

2.7 Discussion

The information provided in these two chapters shows two things: 1) that hospital birth and the interventions so typically associated with it are not always beneficial, are not always in the best interest of the patient, and that they can be harmful; and 2) that home birth with an appropriately trained attendant is safe and reduces the use of unnecessary and potentially dangerous medical interventions. There is potential for harm
in the process of childbirth regardless of place of delivery; therefore, the key issue is what each individual considers to be risk, or what is a chance they are not willing to take. It is not an easy decision to make, but it is a crucial decision that women need to be educated about and take time considering. A woman should not choose to have a hospital birth simply because it is the standard method today and is easiest to attain, nor should she be forced to have a hospital birth (or an unassisted home birth) because of factors making it virtually impossible to obtain physician back-up or find a properly trained midwife. The decision should be left up to the woman, her family, and her chosen medical provider(s). Whatever her choice, she should know the risks and benefits of both options.

It is clear to see that there is no such thing as a simple decision when it comes to virtually any factor regarding pregnancy and childbirth. The amount of routine technology surrounding such a natural process as childbirth is overwhelming. Then when the amount of evidence regarding incorrect or injudicious use and harm is taken into account, it becomes even more confusing. Then add to it the heated debates among professionals within the health care industry as to what is best. After all of this the average person is overwhelmed, confused, and does not know who to turn to or what to believe. The general piece of advice is that if you don’t know then don’t use it. If you don’t know if the benefits outweigh the risks and you can make do without it, then don’t use it. It is clear and undebatable that live, healthy babies can and will be born without use of the latest technology.

Information presented has shown that not only is home birth safe, but many interventions which are commonly used, and thought safe by the medical system, are actually not safe and can be detrimental to the health of both mothers and babies. There
is no such thing as a simple and safe intervention, considering the numerous side effects and risks associated with something as simple as an IV during labor. The risks are not as plain to see as breaking the skin barrier to infection or the amount of fluids going in, but go beyond to include virtual immobilization of the patient and the psychological feeling that she is tied down and the hospital has “a line in” that they can control her through. Electronic fetal monitoring and ultrasound is used more often than not. Electronic fetal monitoring has been proven to have significant risks associated with it, such as a higher cesarean section rate and many false positives for fetal distress, but it is still consistently used and defended by the hospital staff. Ultrasound provides few medical benefits and has numerous suspicions or proof of harm associated with it, but is still commonly used. Abuse of procedures is also clear when evaluating the rising cesarean section rate and the liberal use of episiotomies.

Records from home birth are crucial for analysis of labor and delivery trends because these births are the closest we have to what constitutes normal labor and delivery. In 99% of all labors (hospital births), there is an extraneous factor affecting the woman, whether it be something as simple as feeling uncomfortable with hospital staff coming in uninvited, or something as complicated as altering the course of labor with pitocin or the delivery process with an epidural, episiotomy and/or forceps. The appropriate determination of the maximum length of labor was determined by those practicing “active management” of labors in hospitals (O’Driscoll and Meagher 1986), not by those observing normal labors occurring free of medical intervention. The appropriate length of labor is based upon Friedman’s curve of appropriate cervical dilation, rather than the presence of maternal/fetal distress or maternal coping with labor.
The comfort level and stress level a woman feels is different depending upon where she labors and delivers. In a home birth, she is in the comfort and security of her own home and the midwife is a guest in her home. In a hospital birth, the woman is a patient in the home of the nurses and obstetricians (most of whom she has never met). The entire dimension of stress, comfort, and security changes when you are going through a stressful and emotional experience in someone else’s home, especially if they are not close personal friends. No matter how “natural” a hospital tries to make the labor and delivery experience or how “home-like” they try to make their labor and delivery rooms, it will never be as natural, normal, or in a “home-like” atmosphere as those occurring in a home, so standards will continue to be based upon statistics collected from non-natural labors and deliveries.

Fortunately, home birth is available in some areas in the United States, and nationwide more home birth midwives are becoming licensed. There is a national organization collecting the statistics for all home births in North America attended by Certified Professional Midwives (CPM), so a large database will soon be available to get an idea of what is considered normal among labors occurring without “active management”. This will provide the midwives with what the obstetricians already have—what is considered appropriate among the clients they serve.

Even though more home birth midwives are becoming licensed, it doesn’t necessarily mean that home birth is becoming easier to obtain. Unless there is a change soon in the ease of finding midwives and/or obtaining physician back-up, the number of women attempting unassisted home births will only increase. This is already being seen in some areas. I have been contacted on several occasions to provide a good book on
delivering babies at home without an attendant there. These types of books are available and advertised on many websites advocating natural childbirth or unassisted childbirth at home. The content of the books is far from complete and does not come close to replacing a trained and experienced attendant. The websites usually emphasize that the woman should prepare in advance for unassisted childbirth, know warning signs for complications, and have a plan for getting to the hospital in the event of an emergency. This is not an easy thing to achieve when someone has little to no prior experience. A woman who desperately wants to avoid a hospital birth may view the progression of events differently from an attendant trained to address potential or current complications or serious irregularities in labor. Just having a nervous father-to-be get accurate fetal heart tones is complicated enough, much less having the nervous father-to-be quickly recognize and address complications which could be life threatening, such as shoulder dystocia or a tight nuchal cord.

The ideal situation for women would be one of cooperation, mutual respect, and understanding between all maternal health providers. Following is a very simplified version of an adequate maternal health care system. At the determination of pregnancy, the woman’s risk status would be determined and she would be placed with the health care provider who would best suit their needs. Low-risk women would see a midwife and high-risk women would see an obstetrician and deliver in a hospital. All prenatal visits would last at least 30 minutes unless the woman wanted the visit to end sooner and would include lengthy discussions on nutrition, substance abuse, emotional needs, and dealing with daily stress. The low-risk woman would discuss her birth plans and goals with her midwife and address issues such as benefits and risks of various medical
interventions, place of delivery, childbirth education, previous obstetrical history, concerns about the pregnancy, labor, or delivery, etc. From these discussions the woman and her midwife would come to a conclusion about whether to have a home birth, birth center birth, or a hospital birth. If the woman chooses hospital birth, the midwife would be the birth attendant. The use of certain medical interventions and other needs or desires would be discussed. The women choosing birth center birth would need to address concerns over medical interventions (though not as many as those choosing hospital birth) and plans in the event of complications requiring hospital transport. For those women choosing home birth, plans would be made discussing hospital transport should it become necessary, how to prepare the home for childbirth, and the supplies needed. If at any point during pregnancy, labor, delivery, or postpartum, complications or concerns arose among women choosing birth center or home birth, the midwife would pick up the phone and contact an obstetrician to discuss the concern, have the obstetrician come see the woman, or transfer care. This type of system would return the control of the pregnancy and birth experience back to the woman where it belongs. One can only imagine the positive outcomes to come out of such a system—happier moms for one.

The ideal situation for pregnant women is one in which the obstetricians, midwives, hospitals, birth centers, and home birth networks work together for the benefit of women and infants.
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Appendix A. Cytotec Letter

This is text of the letter written by Searle (the manufacturer of Cytotec) warning of the adverse effects of the use of Cytotec.

August 23, 2000

IMPORTANT DRUG WARNING CONCERNING UNAPPROVED USE OF INTRAVAGINAL OR ORAL MISOPROSTOL IN PREGNANT WOMEN FOR INDUCTION OF LABOR OR ABORTION

Dear Health Care Provider:

The purpose of this letter is to remind you that Cytotec administration by any route is contraindicated in women who are pregnant because it can cause abortion. Cytotec is not approved for the induction of labor or abortion.

Cytotec is indicated for the prevention of NSAID (nonsteroidal anti-inflammatory drugs, including aspirin)-induced gastric ulcers in patients at high risk of complication from gastric ulcer, e.g., the elderly and patients with concomitant debilitating disease, as well as patients at high risk of developing gastric ulceration, such as patients with a history of ulcer.

The uterotonic effect of Cytotec is an inherent property of prostaglandin E1 (PGE1), of which Cytotec is stable, orally active, synthetic analog. Searle has become aware of some instances where Cytotec, outside of its approved indication, was used as a cervical ripening agent prior to the termination or pregnancy, or for induction of labor, in spite of the specific contraindications to its use during pregnancy.

Serious adverse events reported following off-label use of Cytotec in pregnant women include maternal or fetal death; uterine hyperstimulation, rupture or perforation requiring uterine surgical repair, hysterectomy or salpingo-oophorectomy; amniotic fluid embolism; severe vaginal bleeding, retained placenta, shock, fetal bradycardia and pelvic pain.

Searle has not conducted research concerning the use of Cytotec for cervical ripening prior to termination of pregnancy or for induction of labor, nor does Searle intend to study or support these uses. Therefore, Searle is unable to provide complete risk information for Cytotec when it is used for such purposes. In addition to the known and unknown acute risks to the mother and fetus, the effect of Cytotec on the later growth, development and functional maturation of the child when Cytotec is used for induction of labor or cervical ripening has not been established.

Searle promotes the use of Cytotec only for its approved indication.

Further information may be obtained by calling 1-800-323-4204.
Appendix B. Midwives Model of Care

Midwives Model of Care

The Midwives Model of Care is based on the fact that pregnancy and birth are normal life processes. The Midwives Model of Care includes:

• monitoring the physical, psychological, and social well-being of the mother throughout the childbearing cycle;

• providing the mother with individualized education, counseling, and prenatal care; continuous hands-on assistance during labor and delivery, and postpartum support;

• minimizing technological interventions; and

• identifying and referring women who require obstetrical attention.

The application of this woman-centered model of care has been proven to reduce the incidence of birth injury, trauma, and cesarean section.
Appendix C. Perinatal Care Index

Taken from Mothering Magazine  Fall 1993

Mothering Perinatal Care Index

Healthcare costs in 1992: *$838.5 billion**

Percentage of Gross National Product spent on health care in 1965: 6

Percentage spent in 1992: 12

Percentage by which the US healthcare expenditures exceed those of Canada: 40, Germany: 90, Japan: 100

The leading industrialized nations (averaged): 100

Population of the United States: 256,749,000

Percentage who are uninsured or underinsured: 37

The 12 countries with higher life expectancies than the US: Japan, Iceland, Andorra, Italy, Sweden, Australia, Finland, France, New Zealand, Denmark, England and Wales

The 22 countries with lower infant mortality rates than the US: Japan, Sweden, Finland, Switzerland, Canada, Singapore, Hong Kong, Netherlands, France, Ireland, Germany, Denmark, Norway, Scotland, Australia, Northern Ireland, Spain, England and Wales, Belgium, Austria, Italy

Percentage of countries with lower infant mortality rates than the US that provide universal prenatal care: 100

Percentage of women in the US who have no private health insurance: 25

Percentage of women in the US who receive little or no prenatal care: 25

Chances that a woman with little or no prenatal care will give birth to a low-birthweight (less than 5.5 pounds) or premature (less than 37 weeks of gestation) baby: 1 in 2

The factor most closely associated with infant death: low birthweight

Percentage of infant deaths linked to low birthweight: 60

Chances that a low-birthweight infant will die during the first month of life: 1 in 40
Average cost of long-term health care (through age 35) for a low-birthweight baby: $50,558

Average cost of long-term health care (through age 35) for a baby or average weight: $20,033

Cost of newborn intensive care for 1 infant: $20,000-$100,000

Cost of prenatal care for 30 women: $20,000-$100,000

**Healthcare cost savings obtainable by providing universal prenatal care to all women in the US:** $7-$10 billion a year

Percentage of births attended principally by midwives (certified nurse-midwives and direct-entry midwives) in the US: 4

Percentage of births attended principally by midwives in European nations: 75

Percentage of countries with lower infant mortality rates than the US in which midwives are the principal birth attendants: 100

Average cost of a midwife-attended birth in the US: $1,200

Average cost of a physician-attended vaginal birth in the US: $4,200

**Healthcare cost savings obtainable by utilizing midwifery care for 75 percent of pregnancies in the US:** $8.5 billion a year

Cost per year of utilizing routine electronic fetal monitoring during childbirth: $750 million

Number of well-constructed scientific studies in which electronic fetal monitoring has been proven more effective than the use of a simple stethoscope (fetoscope): 0

**Healthcare cost savings obtainable by eliminating the routine use of electronic fetal monitoring:** $675 million a year

US cesarean rate in 1965: 5%

US cesarean rate in 1990: 25%

Cesarean rate targeted by the World Health Organization (WHO) and the US Department of Health and Human Services (HHS): 12%
The 19 industrialized nations with lower cesarean rates than the US: Czechoslovakia, Japan, Hungary, Netherlands, England and Wales, New Zealand, Switzerland, Norway, Spain, Sweden, Greece, Portugal, Italy, Denmark, Scotland, Bavaria, Australia, Canada.

- Percentage of women with cesareans who undergo repeat cesareans today: 91
- Percentage of breech babies born by cesarean in 1970: 11.6
- Percentage of breech babies born by cesarean in 1991: 88
- Ratio of women dying from cesarean to women dying from vaginal birth: 4:1
- Average cost of a cesarean birth: $7,826

Healthcare cost savings obtainable by bringing the US cesarean rate into compliance with WHO and HHS recommendations: $1.5 billion a year

- Average age of weaning worldwide: 4.2 years
- Average age of weaning in the US: 6 months

- Percentage of babies to be breastfed for at least two years, according to the World Health Organization: 100
- Percentage of US babies who are breastfed past one year: 6

- Ratio of ear infections in babies not breastfed to babies breastfed for at least six months: 3:1
- Ratio of urinary tract infections: 5:1
- Ratio of serious illnesses: 5:1
- Ratio of allergic reactions: 7:1

- Percentage of reduction in breast cancer incidence among women who breastfeed for a lifetime total of two years: 40
- For a lifetime total of six years: 66

- Average stay in newborn intensive care unit for nonbreastfed babies: 20.6 days
- For breastfed babies: 9.5 days
- Average formula costs per year for one infant: $600
- Government formula costs per year for WIC participants: $750 million
Amount per year that could be saved in formula expenditures if WIC participants breastfed for one month: $30 million

Healthcare cost savings (exclusive of long-term child and maternal health factors) obtainable by encouraging government compliance with WHO infant feeding guidelines: $1.5 + billion a year

Total healthcare cost savings obtainable by developing midwifery care, demedicalizing childbirth, and encouraging breastfeeding: $13-$20 billion a year

*Unless otherwise noted, statistics in this index apply to the United States. **Sources of data available from Mothering upon request.

Personal note: I requested and received the sources of data for each claim made in the index.
Maternal Prenatal History

Year _____     Midwife code ____   Number__________   Age______   Marital Status_____
Education____    Race_____    Payment self  thirdparty  free
Address________________________________________       Zip code___________
Week prenatals began______   Weight gain _____  Primipara___ Multipara__

Labor and Delivery

1st stage
Duration latent_____ active____ total_____ Was labor augmented_Y__N
How______________

2nd stage
Duration______ Presentation__OA__OP Other________________________
Mother delivery position__side-lying__supine__squatting__standing__sitting__lithotomy
__hands/knees__other___________________________________________
Episiotomy__none__mid__medio-lat__Indication_____________    Extension_Y__N
Laceration_0_1_2_3_4  Site__vag__peri__peri-urethral__Repair_Y__N

3rd stage
Duration______ Delivery__spont__assist__man rem  EBL__<500cc__cc

Membranes
Total time ruptured_______    When__prior to conx_<_5cm__>5cm__2nd stage__delivery
How__SROM__AROM__ Appearance__clear__mec-light__mec-thick__bloody

Newborn
EGA__wks   Weight_______  Length_______  Apgar 1min___  5min___
First fed__breast__bottle  When fed__minutes old

Complications of Labor/Delivery: ____________________________________________
Method of Delivery: __________________________________________________________
Abnormal Condition of the newborn: ____________________________________________
Congenital Anomalies of Child__________________________________________________

Transfer
Hospital______________________ Backup____________________________
Emergency transfer_Y__N
When:  Mother __ROM, no labor __1st stage __2nd stage __3rd stage _immed post
__>2hrs post
Newborn__<30 min __30min-1hr __>1hr    Emergency transfer_Y__N
Reason Mother: __previa__breech__twins__fetal distress__mat distress__no FHT__meconium__PROM__excess bleeding__cord prolapse__BP increase
__pain meds__suturing__retained placenta__postpartum bleeding/hemorrhage
other___________________________________________
Reason baby: __stillborn__respiratory__cong anomaly__sepsis__________________

Appendix D. Data Collection Forms
Number: ____________

If the Patient Voluntarily Leaves/Chooses Hospital

Reason Patient Leaves:  __ Fear of pain  __ Fear of Complications
  __ Fear of repeat of previous delivery (C-sect, LBW, etc)
  __ Discovery of anomaly  __ Discovery of multiple pregnancy
  __ Poor health  __ Other ___________________

Additional Questions if the Patient is Referred Out/No Longer Candidate

__ weeks gestation referred out

Reason Referred Out:  __ Multiple pregnancy  __ Breech
  __ Toxemia  __ Congenital Anomaly
  __ Premature Labor  __ Premature Rupture of Membranes

__ Intrauterine Fetal Demise  __ 42+ weeks gestation
__ Anemia/Poor Diet  __ Other ___________________

If you follow the patient through the delivery please answer these questions:

Mother/Child Condition Upon Delivery:  __ Mother okay  __ Newborn okay
  __ Maternal death  __ Fetal death

Delivery was:  __ Spontaneous  __ Vacuum extr  __ Forceps
  __ Rotation  __ C-sect

Fetal/Maternal Death

Fetal death reason  __ 42+weeks meconium aspiration  __ 40-42 weeks meconium aspiration
  __ 40-weeks meconium aspiration  __ intrapartum asphyxia
  __ congenital anomaly  __ 2nd twin
  __ premature delivery  __ Other ___________________
Appendix E.

Maternal Satisfaction Survey Forms
MOTHER-FRIENDLY CHILDBIRTH INITIATIVE:

NEW MOTHER’S EVALUATION OF SERVICE

Today’s date/date of most recent delivery: _________________________________________________

Name: ....................................................................................................................................

Age/race/marital status/years education: ..............................................................................

Address: ..................................................................................................................................

Phone/email: ..............................................................................................................................

Place of delivery: ......................................................................................................................

Doctor/midwife: .........................................................................................................................

Weight of baby: ..........................................................................................................................

Length of labor/pushing stage: ....................................................................................................

Birth order of baby (include previous stillborns): □ 1st born □ 2nd born □ 3rd born □_________

Method of payment: □ Medicaid □ Private □ Self-pay

Type of delivery: □ Natural □ Vaginal □ Vacuum □Forceps □VBAC □ Cesarean □ Repeat Cesarean

Was infant: □ Breech □ Transverse □ Twins □ 42 wks+ □ Preterm (less than 37 weeks)

Did you breastfeed/how long: ....................................................................................................

When did you decide to breastfeed: □ Before pregnancy □ 1st trimester □ After 3rd month
□ Upon seeing baby □ After birth when explained the benefits

If you chose not to breastfeed, who’s opinion, if any, influenced your decision
□ Partner □ Mother □ Other relative □ Physician/care provider □ Women friends

Did you attend/use: □ Childbirth education □ Type/Instructor__________________
□ Doula □ Other labor support person □ Breastfeeding classes □ Massage
□ Hypnosis preparation □ Prenatal yoga □ Other prenatal exercise □ VBAC classes
Was your baby circumcised:  
- □ Yes  □ No

If you chose to circumcise, who’s opinion, if any, influenced your decision:
- □ Partner  □ Father  □ Other relative
- □ Physician/care provider  □ Women friends

How long after you delivered did you go home:

How long after you delivered would you have preferred to go home:

Rate your birth experience from 1-10 (10 is best):

I expected my birth experience to be:
- □ Worst experience of my life  □ Traumatic
- □ Unpleasant  □ Pleasant  □ Very good  □ Best experience of my life

Did this birth experience meet, fall short of, or exceed your expectations:

Who helped you in the first 10 days you were home with your newborn (check all that apply):
- □ Mother  □ Partner  □ Other relative
- □ Nurse  □ Midwife  □ Breastfeeding counselor
- □ Postpartum doula  □ Women friends
COMPLIANCE WITH THE TEN STEPS OF THE MOTHER-FRIENDLY CHILDBIRTH INITIATIVE

To receive CIMS designation as “mother-friendly”, a hospital, birth center, or home birth service is assessed on its fulfillment of the Ten Steps of Mother-Friendly Care

A mother-friendly hospital, birth center, or home birth service:

STEP 1:  Offers all birthing mothers:
- Unrestricted access to the birth companions of her choice, including father, partners, children, family members, and friends;
- Unrestricted access to continuous emotional and physical support from a skilled woman—for example, a doula, or labor-support professional;
- Access to professional midwifery care.

<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Did you have full control over choosing the birth companions you wanted to be with you in the labor and/or delivery room, including friends, family members, and children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Do you feel that the service made your birth companions comfortable, both mentally and physically, while they were with you?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.3</td>
<td>Did you have <strong>continuous</strong> one on one emotional and physical support from a woman experienced in labor support?  (Comment: Was person provided by service?)  Were you ever left alone during your labor? (Comment: Why and how long?)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.4</td>
<td>Did you ask your labor support provider to be your advocate and talk to the staff on your behalf?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.5</td>
<td>Did the staff of the service make you feel that you had to choose between having their support or that of your designated labor support person?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.6</td>
<td>Did you have a midwife with you for labor, delivery, or post-partum?</td>
<td>Yes</td>
<td>No</td>
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</table>
**STEP 2: Provides accurate descriptive and statistical information to the public about its practices and procedures for birth care, including measure of interventions and outcomes.**

| 2.1 | During your pregnancy, were you given information such as the cesarean rate, VBAC, epidural, episiotomy, and induction/augmentation rate for the service? your care provider? | Yes | No |
| 2.2 | Were you informed, prior to admission, of any “standard procedures” in which the hospital required for everyone, regardless of what your doctor may have ordered, for example, enema, continuous electronic monitoring, or an IV? | Yes | No |
| 2.3 | Did you create a birth plan? Do you feel it was followed by the staff of the service? your care provider? (Comment: if not, why wasn’t it and what did you do about it) | Yes | No |
| 2.4 | Were you told about the potential benefits and risks of harm for procedures which could possibly have been performed on you, and then asked to sign a form (informed consent) saying that they had your permission to perform the below procedures: episiotomy? epidural anesthesia? forceps delivery? cesarean surgery? induction/stimulation of labor? IV? (Comment: Were you given informed consent before admission, during admission, or before the procedure was done?) | Yes | No |
| 2.5 | Do you feel that you were given enough information and understood the information before you signed the informed consent form or allowed the procedure to be done? (Comment: if no, then why did you sign the form and/or allow procedure to be done) | Yes | No |
| 2.6 | Did the staff/service respect your wishes, even if they differed from what was considered routine and/or correct? | Yes | No |

**STEP 3: Provides culturally competent care—that is, care that is sensitive and responsible to the specific beliefs, values, and customs of the mother’s ethnicity and religion.**

| 3.1 | Do you feel that the service respected your culture, beliefs, values, and customs, whether they apply to culture, religion, race, or sexual orientation? | Yes | No |
| 3.2 | Were you contacted by the service to evaluate the quality of the care provided? | Yes | No |
| 3.3 | If you were raised in a different language and reverted back to that language in labor and/or delivery, was there a professional who also spoke that language to assist you? | Yes | No |
STEP 4: Provides the birthing woman with the freedom to walk, move about, and assume the positions of her choice during labor and birth (unless restriction is specifically required to correct a complication), and discourages the use of the lithotomy (flat on the back with legs elevated) position.

| 4.1 | During labor, did the staff encourage you to move and change positions freely as one way of helping labor progress normally and make you more comfortable? | Yes □ No □ |
| 4.2 | Did the staff tell you that being upright and not laying in bed could shorten labor and keep the baby in a good position for birth? | Yes □ No □ |
| 4.3 | During pushing and the birth, did the staff assist you in changing positions and using upright birthing positions in order to speed up delivery? | Yes □ No □ |
| 4.4 | Did you have access to any of the following labor aids that made it easier to get into various labor and birth positions (birthing stools, birthing balls, rocking chairs, showers, water birth pools, acupuncture, massage, a quiet private room, squatting bars)? | Yes □ No □ |
| 4.5 | Were you told the benefits of delivering in an upright position and encouraged not to deliver in the lithotomy position (flat on back with legs elevated)? | Yes □ No □ |
| 4.6 | Did you end up delivering in the lithotomy position? Was it your choice? | Yes □ No □ |

STEP 5: Has clearly defined policies and procedures for:
- Collaborating and consulting throughout the perinatal period with other maternity services, including communicating with the original caregiver when transfer from one birth site to another is necessary.
- Linking the mother and baby to appropriate community resources, including prenatal and post-discharge follow-up and breastfeeding support.

| 5.1 | Were you informed of community services/resources or educational services even if they were not institutional based and thus in direct competition with those provided by the service (these include social services, new mom groups, birth centers, midwives, doulas, childbirth educators, and lactation consultants)? | Yes □ No □ |
| 5.2 | If you required transfer from home/out-of-hospital care to hospital care or midwife to obstetrician care, do you feel you were treated by the institution and care providers with respect? | Yes □ No □ |
| 5.3 | If you planned an out-of-hospital birth, did your birth attendant have an open communication system/professional relationship with your back-up physician/hospital? If not, did you and/or your birth attendant attempt to obtain this? | Yes □ No □ |
| 5.4 | Were you or your baby transferred to a hospital with a higher level of care? If yes, was your care provider, your birth companions, and/or yourself able to go with you or your baby? | Yes □ No □ |
STEP 6: Does not routinely employ practices and procedures that are unsupported by scientific evidence, including but not limited to the following: shaving, enemas, IVs, withholding nourishment, early rupture of membranes, electronic fetal monitoring. Other interventions are limited as follows: an induction rate of 10% or less; an episiotomy rate of 20% or less, with a goal of 5% or less; a total cesarean rate of 10% or less in community hospitals and 15% or less in tertiary hospitals; and a VBAC rate of 60% or more with a goal of 75% or more.

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<tr>
<td>6.1 While in labor, did the service:</td>
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<tr>
<td>a: deny food and drink?</td>
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<td></td>
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<tr>
<td>b: do a perineal shave?</td>
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<tr>
<td>c: give you an enema?</td>
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<tr>
<td>d: rupture membranes in early labor?</td>
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<tr>
<td>e: employ continuous external electronic fetal monitoring?</td>
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<tr>
<td>f: employ continuous internal scalp electrode fetal monitoring?</td>
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<td>g: allow the choice of intermittent electronic fetal monitoring, fetascope, or doppler?</td>
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<tr>
<td>h: allow you to decline an IV or IV access port?</td>
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<tr>
<td>i: induce your labor?</td>
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<tr>
<td>j: perform an episiotomy?</td>
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<td>k: require you to wear specific gown?</td>
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STEP 7: Educates staff in non-drug methods of pain relief, and does not promote the use of analgesic or anesthetic drugs not specifically required to correct a complication.

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<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>7.1 Did the staff encourage you to labor and deliver without the use of pain medication, such as an epidural, or narcotic (ex, Demerol)? If they did and you did not have any drugs, did they provide and assist you with helpful pain-relief alternatives? (Comment: if no, what did they do to assist you)</td>
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<td>7.2 If you chose to have some form of pain relief, do you feel you fully informed of all possible risks of harm associated with the drugs to your labor, yourself, to your baby, and to breastfeeding before agreeing to it?</td>
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<td></td>
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<tr>
<td>7.3 Did an anesthesiologist/nurse anesthetist come into your room uninvited by you to talk about an epidural?</td>
<td></td>
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<tr>
<td>7.4 If you had an epidural, was a nurse with you at all times after it was inserted?</td>
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STEP 8: Encourages all mothers and families, including those with sick or premature newborns or infants with congenital problems, to touch, hold, breastfeed, and care for their babies to the extent compatible with their conditions.

| 8.1 | Was your newborn allowed to be skin to skin on your body from the time of birth for at least one full hour with no separation? (Comment: if no, why) | Yes ☐ | No ☐ |
| 8.2 | Did anyone try to take your baby away before one full hour had passed for any reason, including eye prophylaxis, weighing, and washing? (Comment: if yes, why) | Yes ☐ | No ☐ |
| 8.3 | After the 1st hour, was your baby in your room with you all the time, including at night? If the staff removed your baby did they first tell you why and get your permission? Did you feel uncomfortable when they took your baby out of your sight? (Comment: if yes, why did you let them) | Yes ☐ | No ☐ |
| 8.4 | Were you encouraged to have your baby physically next to your body as much as possible? | Yes ☐ | No ☐ |
| 8.5 | Do you feel that the staff treated you and your baby as an inseparable pair rather than as two separate beings with different needs? | Yes ☐ | No ☐ |
| 8.6 | If your baby was premature or sick, were you still encouraged to breastfeed, talk to, touch, and help staff care for your baby? | Yes ☐ | No ☐ |

STEP 9: Discourages non-religious circumcision of the newborn.

| 9.1 | Were you encouraged not to have your newborn son circumcised? | Yes ☐ | No ☐ |
| 9.2 | Before the circumcision, were you informed of the risks of harm involved and then asked to sign a form giving your permission (informed consent)? | Yes ☐ | No ☐ |
| 9.3 | If you chose not to circumcise, did the staff give you information on caring for an intact penis? | Yes ☐ | No ☐ |

STEP 10: Strives to achieve the WHO-UNICEF “Ten Steps of the Baby-Friendly Hospital Initiative” to promote successful breastfeeding.

| 10.1 | If after the birth, you did not plan to breastfeed, did the staff within 24 hours of birth tell you the benefits of breastfeeding and encourage you to do so, even if only for a few days or weeks? Did you then change your mind? | Yes ☐ | No ☐ |
| 10.3 | Did the staff help you initiate breastfeeding within 1 hour of birth? | Yes ☐ | No ☐ |
| 10.4 | Did the staff show you how to help your baby latch on, different breastfeeding positions, and how to maintain lactation even if separated from your baby? | Yes ☐ | No ☐ |
| 10.5 | Did the staff encourage you to breastfeed on demand rather than following a schedule? | Yes ☐ | No ☐ |
| 10.6 | Did the staff make sure that your baby did not get any sugar water or pacifiers in order to help breastfeeding get started? | Yes ☐ | No ☐ |
| 10.7 | Did the staff refer you upon discharge to breastfeeding support groups or services within your community? | Yes ☐ | No ☐ |
Additional and optional questions requiring comments
1. If you had to do it all over again, what would you do differently?
2. If you could tell the staff and/or your provider anything, what would it be?
3. If you didn’t like the care you received, did you tell anyone? Who was it and what was their reply?
4. Was there a nurse who was unable to help you with breastfeeding or seemed to discourage breastfeeding?
5. While pregnant, did you do any reading on your own? Did you feel confident with the staff and your provider and trust their judgment and opinions?
6. At any point in your pregnancy, were you told that this baby may be too large to deliver vaginally, that you may be too small to deliver vaginally, or that you may have to be induced? How did that make you feel and how did you respond?
7. Did you feel confident and that you were “in charge” during your labor and delivery? Why or why not? Who was “in charge”?
8. How long after being admitted and at what centimeter dilation was your water broken and/or your labor stimulated with pitocin/oxytocin?
9. What was the best and worst part of your birth experience? Is there anything the staff and/or your provider could have done to make your birth more pleasurable?
10. What is your overall opinion of the nurses/staff and your care provider? Is your opinion different from what it was when you first entered into the service?
11. Why did you choose to deliver in the place you chose? Did you ever consider delivering anywhere else or with someone else?

Interviewer: ________________________________ DB: ____ TR: ____
Appendix F. Confidentiality Issues

Information collected from the midwives’ personal files was filled in on data collection sheets which are now locked securely in a filing cabinet. The data was entered into a database and all information has been coded to ensure no names of physicians are readily available. The database is the official database for the Louisiana Midwives’ Association and is assessable by only one person. That person is whoever is currently managing their statistics. Any person other than the current data base manager wishing to use the records for any research must be given unanimous approval from the midwives. They must also approve any work before it is sent for publication.

The phone interviews were taped with consent of the women and the tapes are also secured within a locked filing cabinet. Transcribed interviews are located within the locked filing cabinet as well. The tapes and transcriptions will not be given to any other researchers without the express written consent of the women interviewed. All names have been changed.
Misty Richard was born in East Baton Rouge Parish and has resided in south Louisiana her entire life. She received her Bachelor of Science in microbiology from Louisiana State University in 1999. After receiving this Master of Science degree she will remain at Louisiana State University to pursue a doctorate in epidemiology as well as concurrently working towards a Master of Public Health from Louisiana State University Health Sciences Center in New Orleans, Louisiana.

Her interest in midwifery care and home birth began in 1997 when she delivered her daughter, Michaela, at home with a licensed midwife in attendance. Since then she has continued to work with the midwives in Louisiana and now manages their database. She has also been asked to serve on their advisory committee to the State Board of Medical Examiners.

In her spare time she enjoys gardening and landscaping her yard, fishing, running, and archery. After graduate school she hopes to work for the state of Louisiana in public health.