

Chapter Three ~ Correcting the Problem

Obviously, the inappropriate use of Cesareans can't be addressed without an effective and acceptable alternative -- a plan that safely reduces medical intervention and surgical delivery while meeting the physical, emotional and psycho-social needs of childbearing women. Ultimately, the obstetrical profession needs to learn, teach and utilize physiological management when providing care to healthy women with normal pregnancies. However, there are obstacles to achieving these goals.

One reason that obstetricians and hospitals are unprepared to provide physiologic care for a normal childbirth this is that medical schools haven't ever taught the art and science of physiologically management. In the medical profession, there is a hundred year prejudice against using non-medical methods to manage normal birth. Obstetricians did not learn and are not allowed to utilize physiological management because it is legally interpreted by an obstetrically-defined medical system as a 'substandard' form of care.

For the lay public, the problem is a strong but wrong assumption that normal birth is dangerous for babies and damaging to the pelvis floor of childbearing women. Most people put their faith in the high-tech, high drama variety of obstetrics that we see portrayed in the movies and TV shows such as ER and Gray's Anatomy. This inevitably focuses on continuous electronic fetal monitoring (EFM) and 'just in the nick of time' C-sections to rescue babies.

Whatever beliefs a pregnant woman or the grandparents may have about childbirth, each of them wants what is best for the baby and best for the mom. For most Americans, safety in childbirth equates to EFM to save the baby from brain damage and a C-Section to save the mother from 'female troubles'. Under these circumstances, any 'alternative' to the current aggressive use of technology and obstetrical interventions is thought of as pure foolishness.

But are these conclusions are born out by the scientific literature? Does the research confirm that EFM and liberal use of Cesarean surgery eliminates or at least substantially reduces neurological problems in newborns? Nobody wants the mother to become incontinent as a result of childbirth but is elective Cesarean surgery a reliable method to prevent the pelvic organ problems sometimes associated with childbearing? Interestingly enough, the obstetrical profession's research says "no" to both of these proposed fixes. More specifically, research also identifies that many routine obstetrical practices actually make matters worse.

Electronic Fetal Monitoring:

Since 1975 there has been a 6-fold increase in the routine use of EFM on low-risk mothers. This reflects the obstetrical profession's century-long search for something that would dependably eliminate cerebral palsy and other neurological problems for babies associated with birth. Obstetricians hoped and fervently believed the expanded use of EFM, combined with cesarean section whenever the data indicated a possible problem, was the modern answer to an ancient and heartbreaking problem. EFM is now the most frequently used medical procedure in the US -- official estimates are that 85 to 93 percent of all childbearing women are continuously hooked up

to continuous EFM equipment during labor.[citation L2M Survey 2002 & 2006; Martin et al 2003] Many health insurance carriers reimburse hospitals \$400 an hour for continuous electronic monitoring in labor.

However, the consensus of the scientific literature has never supported the routine use EFM for this purpose. A 2006 meta-analysis aggregated the data from randomized controlled trials done during the 1980s and 1990s and found *no change in perinatal mortality or cerebral palsy rate* when electronic fetal monitoring was used during labor. It did identify a decided increase in Cesarean section rates and operative deliveries. Its only positive finding was a small reduction in neonatal seizures, but this doesn't seem to result in any over-all improvement in infant well being.

Another recent study noted that the ability of continuous EFM to detected potential cases of cerebral palsy during labor is only 00.2%. This is not because the electronic circuitry of the equipment is flawed, but because the premise is incorrect – cerebral palsy can neither be reliably detected nor prevented based on the routine use of EFM during labor. Only about 8% of all neurological complications for newborns have any possible association with events of labor or birth. When EFM is routinely used on a low and moderate risk population with normal pregnancies, it introduces unnatural and unnecessary risks. In spite of these well-known problems, the universal use of EFM during normal labor has continued unabated and resulted in a sky-rocketing Cesareans section rate that is *not* associated with better outcomes. Unfortunately, the delayed and downstream complications associated with the liberal use of Cesarean surgery makes this policy counterproductive in the extreme.

A current EFM textbook for L&D nurses and midwives notes that: “the greatest misconception about EFM is the belief that it is a diagnostic tool. EFM is usefully only as a screening tool”. [EFM-Concepts and Applications, Menihan & Kopel, 2nd ed, p. xii, 2008] The value of EFM lies in using the information as a *question*, and not as an answer. Over 90% of fetuses with ‘non-reassuring’ FHR patterns are healthy. Additional tools and techniques must be used to determine the significance of any abnormal data. Those methods include fetal scalp sampling (taking blood from small blood vessels on the unborn baby’s scalp) and fetal scalp stimulation. However, these additional methods also suffer from serious disagreements between professionals as to proper guidelines for their use and the validity of the information they provide. “When in doubt, cut it out” is still the operative obstetrical motto.

In 2003, 1.2 million Cesarean surgeries were performed in the US (27.5% cesarean rate) at a cost of \$14.6 billion. The Cesarean rate for 2006 was over 31%. It is still climbing and predicted to be over 50% by the beginning of the next decade. The public and the press never seem to question the unlikely idea that normal childbirth is somehow made safer and better by turning it into an expensive and risky operation. Yet this policy of ‘pre-emptive strike’ has not made the tiniest bit of difference in the incidence of CP and similar neurological conditions. This verifiable fact is now gratefully *used in malpractice cases in the defense of obstetricians*. Otherwise, these well-recognized facts have made no difference in the continuous use of EFM on low and moderate risk mothers-to-be.

A failed experiment -- the routine use of continuous EFM --: Thirty years of continuous electronic fetal monitoring of all laboring women, combined with the liberal use of cesarean section at the slightest suspicion of fetal distress, has *failed to reduce the rate of cerebral palsy*

and other neurological disabilities. This well-documented fact is widely acknowledged in the scientific world. In July of 2003, a report by the *American College of Obstetrician and Gynecologists (ACOG) Task Force on Neonatal Encephalopathy & Cerebral Palsy* stated:

“Since the advent of fetal heart rate monitoring, there has been no change in the incidence of cerebral palsy. ... The majority of newborn brain injury does not occur during labor and delivery. most instances of neonatal encephalopathy and cerebral palsy are attributed to **events that occur prior to the onset of labor.**” [emphasis added]

This ACOG task force report has the endorsement of six major federal agencies and professional organizations, including the CDC, the March of Dimes and the obstetrical profession in Australia, New Zealand and Canada and is widely regarded as the “most extensive peer-reviewed document on the subject published to date”.

The September 15, 2003 edition of *Ob.Gyn.News* stated that:

“The increasing cesarean delivery rate that occurred in conjunction with fetal monitoring has *not* been shown to be associated with *any reduction* in the CP [cerebral palsy] rate... ... Only 0.19% of all those in the study [diagnosed with CP] had a non-reassuring fetal heart rate pattern..... If used for identifying CP risk, a non-reassuring heart rate pattern would have had a **99.8% false positive rate** [N.Engl. J. Med 334[10:613-19, 1996]. The idea that infection might play an important role in [CP] development evolved over the years as it became apparent that in most cases **the condition cannot be linked with the birth process.** ” [emphasis added]

An August 15, 2002 report in *Ob.Gyn.News* stated that:

“Performing cesarean section for abnormal fetal heart rate pattern in an effort to prevent cerebral palsy is likely to *cause as least as many bad outcomes as it prevents.* ... A physician would have to **perform 500 C-sections** for multiple late decelerations or reduced beat-to-beat variability **to prevent a single** case of cerebral palsy.

But since Cesarean section carries a roughly 0.5% risk of future uterine rupture, those 500 C-sections would result on average in **2.5 uterine ruptures.** This in turn would cause **one case of neonatal death** or cerebral palsy.... **So I’ve prevented one case of cerebral palsy and I’ve caused one,** concluded Dr. Hankins, professor and vice chair of ob.gyn at the University of Texas, Galveston.

Moreover, those 500 women who underwent C-section because of an abnormal fetal heart rate pattern face **substantial morbidity related to their surgery**, including a 5 to 10 fold increase in relative risk of infection, a 5-fold increase in [blood clots] as well as a 10- to **20-fold increase in future risk of placenta previa and accreta**, he added.” [emphasis added]

*Placenta accreta is when the placenta grows abnormally into the uterus; ‘percreta’ is when it grows through the uterine wall and attaches to the bladder or bowel. These are life threatening

complications that frequently require an emergency hysterectomy to stop the bleeding. Percreta has a 7 to 10% maternal mortality rate.

Understanding EFM better and knowing its limitations: It is generally assumed that EFM is the equivalent of an electrocardiogram (EKG) for the unborn baby, with the ability to collect multiple data points and provide definitive diagnostic findings. But that is a serious misunderstanding of the technology.

EFM comes in two basic forms –external and internal. External monitoring uses two belts that go around the outside of the mother’s pregnant abdomen. One uses ultrasound to pick up the baby’s heart rate. The other is fitted with a pressure gauge that tracks each uterine contraction, allowing the nurse to note the frequency and when each contraction begins and ends. External monitoring is simply an electronic mechanism to count the pulse rate of the unborn baby and transpose the acoustic signal of the fetal heart rate into a printed graph and/or a video display. This makes visible the four auditory markers of fetal wellbeing (baseline heart rate, variability, accelerations and absence of pathological decelerations). External EFM is technologically vulnerable to doubling the really low numbers and half-counting the high ones. This can cause a serious problem to be missed unless the speaker is turned on and someone knowledgeable is listening. With external monitoring, the mother’s heart rate can also be mistaken for the unborn babies. This can be cause for great alarm when the baby is actually fine or provide a false sense of security when the baby is in real trouble.

Internal EFM requires that the amniotic membranes that surround the unborn baby be ruptured (‘breaking the water’) and a tiny corkscrew electrode used to puncture the skin and attach itself to the baby’s scalp. This sensor picks up the electrical signal of the fetal heart beat. By directly attaching the fetal heart electrode to the baby’s scalp, the electronic signal is not easily lost when the mother moves around. Internal monitoring is also not prone to the problem of double low rates, half counting high ones or inadvertently picking up the mother’s pulse instead of the baby’s. However, these improvements come at the price of a very invasive system that of itself usually mandates that the mother remain in bed and relatively immobile. Internal EFM is still not an electrocardiogram (EKG) of the fetal heart and therefore it is subject to all the same issues of interpretative errors.

In contrast to this expensive, invasive and difficult to use system, listening to the baby’s heart tones during labor with a simple fetoscope (a special non-electronic stethoscope) or an electronic Doppler can provide the same quality of information on the unborn baby’s wellbeing. Regularly listening to fetal heart tones at least every 30 minutes in active labor with an electronic Doppler for one full minute immediately following a contraction is called *Intermittent Auscultation* or ‘IA’. Hospitals often choose not to use IA because it requires one-to-one nursing or nurse-midwifery care, which they think of as too expensive. However, many parents find the full-time presence of the nurse or nurse-midwife to be an added bonus. IA permits on-going data for the same auditory markers of fetal wellbeing to be obtained without the interpretive errors, physical restrictions, expense and unrealistic expectations associated with the use of continuous EFM.

IA is equally as effective as continuous EFM, with the added benefit of a greatly reduced cesarean rate. This is, in part, because it *unhooks* healthy mothers from machines and permits laboring women to move around freely. No longer tethered to the bed by electronic wires, the mother is able to change positions frequently, walk, use hot showers or deep water for pain relief and make “right use of gravity” These practices reduce fetal distress and the need for Pitocin-augmentation of labor, pain medication, anesthesia and instrumental and operative delivery.

In Conclusion: Multiple aspects of both internal and external EFM disturb and frequently disrupt the spontaneous process of labor by restricting or eliminating the mother’s ability to move around during labor. Because she spends the vast majority of time in bed lying down, the frequency and severity of stress on the fetus is increased, as is the operative delivery rate for its mother. The stated purpose of EFM is to reduce the incidence of fetal distress by detecting and correcting problems early on. Instead we find that EFM is oxymoronic to its own purpose. For healthy women, it often introduces the very problem it was suppose to prevent.

Cesareans not safe or effective for preventing pelvic problems:

Having identified that the ‘prophylactic’ use of Cesarean is unable to prevent cerebral palsy in babies, elective C-section is often promoted as a prophylactic procedure whose value lies in reducing pelvic floor problems later in the woman’s life. However, reputable research also does not support the use of elective Cesarean surgery as either a safe or a reliable method to achieve this goal.

In an article entitled “*Elective Cesarean Section: An Acceptable Alternative to Vaginal Delivery?*”, Dr Peter Bernstein, MD, MPH, Associate Professor of Clinical Obstetrics & Gynecology and Women’s Health at the Albert Einstein College of Medicine, reported on the failure of the obstetrical profession to practice evidence-based medicine as it applies to this topic. Addressing the popular notion that pelvic floor damage and incontinence were the inevitable result of normal birth (to which cesarean surgery was the proposed remedy), Dr Bernstein observed:

“...these adverse side effects may be more the result of *how* current obstetrics manages the second [pushing] stage of labor. Use of episiotomy and forceps has been demonstrated to be associated with incontinence in numerous studies. Perhaps also vaginal delivery in the dorsal lithotomy position [lying flat on the back] with encouragement from birth attendants to shorten the second stage with the Valsalva maneuver [prolonged breath-holding], as is commonly practiced in developed countries, *contributes significantly* to the problem.”

A guest editorial published in *Ob.Gyn.News*; August 1, 2002 by Dr. Elaine Waetjen debunked the idea that elective cesareans were safe or could reliably prevent the need for pelvic surgery later in life.

“Cesarean surgery causes more maternal morbidity and mortality than vaginal birth. In the short term, C-Section doubles or triples the risk of maternal death, triples

the risk for infection, hemorrhage and hysterectomy, increases the risk of serious blood clots 2 to 5 times and causes surgical injury in about 1% of operations.”

In the long term, **cesarean section increases the mother’s risk** of a placenta previa, accreta or percreta, uterine rupture, surgical injury, spontaneous abortions and ectopic pregnancies while decreasing fecundity. Babies delivered by cesarean have a higher risk of lung disorders and operative lacerations.”

Dr Waetjen stated that a: “[physicians] would have to do 23 C-sections to prevent one such surgery.” She ends by commenting that: “... instead of offering elective cesarean in an attempt to prevent future prolapse or incontinence, we should be examining what we can do in our management of vaginal deliveries to protect pelvic floor function”.

Non-physiological pushing styles and positions are risky for mother and baby both -- “purple pushing” during 2nd stage labor damaging to the soft tissue of the birth canal; study confirms that traditional upright positions provide the most room for baby to be born normally:

Another report is published in *Ob.Gyn.News*, March 15, 2003, councils against “purple pushing”. This describes a common practice in medicalized birth when the mother is directed to hold her breath and push so long that she temporarily uses up all her oxygen and gets purple in the face. Prolonged pushing of this type can cause tiny blood vessels [capillaries] in the mother’s face to break and sometimes surface blood vessels in her eyes will rupture, leaving a telltale bright red spot, similar to the damage that accompanies a black eye. Purple pushing is result of using the Valsalva maneuver, a combination of prolonged breath-holding and “closed-glottis” pushing.

The *Ob.Gyn.News* article is a synopsis of research done by Lisa Miller, CNM, JD, a former labor and delivery nurse, a nurse-midwife and also an attorney. She identified the general idea of ‘directed’ pushing as an undesirable practice that interferes with normal physiology. Directed pushing usually means the mother is being coached by the labor room nurse or doctor to hold her breath to a count of ten and push as long and hard as possible. This is the familiar scene in the movies that show the mother lying in bed on her back, while her husband helps to hold her legs up in the air. With every uterine contraction, the hospital staff exhorts the laboring women to push “harder, harder, harder, hold it, hold it, now come on, give it all you’ve got, one more push, come on, just a little longer, we can see a little bit of the baby’s head, don’t waste your contraction” etc, etc, etc until the mother is out of breath and purple in the face. This style of ‘shout it out’ pushing is biologically unnecessary and counterproductive for several reasons.

The hospital’s coaching policy assumes the mother’s natural biological urge to push is somehow inadequate or that she wouldn’t know how and therefore labor attendants must instruct the mother to hold her breath to a count of ten three times for each pushing contraction. Purple pushing is uncomfortable, undignified, and, when contrasted with the ‘right use of gravity’, usually counterproductive. It is not recommended by evidence-based studies because it disturbs the oxygen-carbon dioxide balance and causes a dangerous rise in the mother’s blood pressure.

Most regrettably, this form of coached, ‘shout it out’ pushing is perceived by laboring

women as an unspoken criticism, that somehow she isn't doing it quite right or isn't trying quite *hard* enough. Even more disturbing is the anxiety it introduces, which gives everybody in the room the idea that either childbirth is a race with a big prize at the end for the fastest birth *or* the baby is in deep do-do and the staff is trying to get it out before they have to do a crash C-section. Neither is true for 99.99% of healthy women.

Ms. Miller states that:

“Long Valsalva's maneuvers -- or “purple pushing”--- and standard supine [i.e. lying on one's back] positioning should be reconsidered.

Long Valsalva pushing can adversely affect maternal hemodynamics, which in turn *adversely* affects fetal oxygenation

Purple pushing--or closed-glottis pushing--during which the patient holds her breath for 10 seconds while pushing is safe in the approximately 80% of low-risk pregnancies. But that **doesn't mean it works best ... in high-risk cases, the baby can't tolerate that kind of pushing.**

....near-infrared spectroscopy used to evaluate fetal effects revealed that closed glottis and coached pushing efforts led to *decreased* mean cerebral O₂ saturation and increased mean cerebral blood volume. All Apgar scores were below 7 at one minute and below nine at five minutes. [i.e. sub-optimal Apgar scores indicating a transient stress for the newborn]

Open-glottis pushing, on the other hand, allows the patient to exhale while bearing down and leads to minimal increase in maternal blood pressure and intra-thoracic pressure, maintained blood flow, and decreased fetal hypoxia.”

Right and wrong use of gravity: At a meeting of the Radiological Society of North America, two radiologists from the University Hospital, Zurich, Switzerland described a pelvimetry study using magnetic resonance imaging (MR) to determine which maternal positions provided the most room for the baby to be born.

The study contrasted the conventional supine position (mother lying flat on her back) to positions in which the mother was squatting or on all-fours, in a ‘hands and knees’ position. A report on their presentation, aptly entitled “**Upright Positions Offer Most Room for Delivery**”, was published in *Ob.Gyn.News* [2002;Volume 37 • No 3]. They measured the space available for the baby to pass through at the three critical landmarks of the childbearing pelvis –intertuberous diameter, interspinous diameters, and the sagittal outlet. They discovered that upright positions provided an average of slightly more than a centimeter at *each* of these junctions.

“Upright birthing positions *provide significantly more room for delivery* in terms of pelvic dimensions, compared with lying supine [on her back], Dr. Thomas Keller said. He and his colleagues ...who performed MR pelvimetry on 35 non-pregnant women to compare pelvic bony dimensions in the supine, hand-to-knee, and squatting positions.

These differences are statistically **significant and confirm the advantages of birthing positions long practiced in other cultures**, the study's coauthor Dr. Rahel Kubik-Huch noted during an interview. [emphasis added]

... the theoretical ideal would thus be to adopt the hands and knees position to help the presenting part through the interspinous diameter, and to squat rather than remain supine as the it [the head] traverses the sagittal outlet, said Dr. Kubik-Huch.”

This silly little centimeter of extra space between lying down and standing up can easily be the difference between a spontaneous vaginal birth with a healthy baby and a difficult one that requires unusually long and hard pushing, the use of forceps or vacuum to extract the baby or even a Cesarean section that may leave both mother and baby in need of prolonged hospitalization or specialized care after the birth. It turns out that the ‘right use of gravity’ during the 1st and 2nd stage of labor is the best way facilitate a normal birth. By avoiding the use of obstetrical forceps or vacuum extraction, the soft-tissue of the mother’s pelvis and the unborn baby’s brain are protected from the damage associated with either prolonged pushing or instrumental deliveries.

Judging a System by its Results

Ultimately, a maternity care system is judged by its results -- the number of mothers and babies who graduate from its ministrations as healthy, or healthier, than when they started. Medicalizing healthy women makes normal childbirth unnecessarily and artificially dangerous and is unproductively expensive. Our current system of routine obstetrical intervention for healthy women must be reevaluated and reformed. But unlike many of the problems facing us in the 21st century that have defied our best efforts—cancer, terrorism, global warming, affordable healthcare, etc.— we know what to do about this problem. The scientific literature clearly demonstrates that physiological management is the safer and most cost-effective form of care for a healthy population.

For many centuries, the normal, non-surgical care of pregnancy and normal birth has been called ‘maternity’ care. The origin of this word is ‘maternal’ and describes care organized around the needs of the mother and her strong desire to protect her unborn or newborn baby. One small step towards a more functional system would be to use the term maternity care instead of ‘obstetrical’ when providing care to healthy women during a normal pregnancy or childbirth. This simple correction would help everyone realize that childbearing is primarily about the mother and baby and not primarily about the *professions* or *professionals* that provide that care.

Efforts to rehabilitate our maternity care system must start by listening to childbearing women and their families as a class of *experts in the maternity experience*. Because physiological management has never been a part of obstetrical education in the US, medical educators must learn and teach the principles of physiological management to med students.

A newly formulated national maternity care policy would integrate physiological principles with the *best advances in obstetrical medicine* to create a single, evidence-based standard for all healthy women. All categories of birth attendants would use these methods when providing care to healthy women with normal pregnancies. Only then will family practice

physicians, obstetricians and professional midwives be able to enjoy a mutually respectful, non-controversial relationship. Under this logical system, the appropriate form of care for any individual mother-to-be (physiological vs. medical) would be determined by the *health status of the childbearing woman and her unborn baby*, in conjunction with the mother's stated preferences, rather than by the *occupational status of the care provider* (physician, obstetrician, midwife). At present, *who* the woman seeks care *from* (physician/obstetrician vs. midwife) determines *how* she is cared for. This is illogical.

It's inappropriate to use a surgical billing code for normal spontaneous childbirth. A professional billing code must be configured for physiologically-based care which encompasses the entire intrapartum period as a continuum. This would fairly reimburse professional birth attendants for the time they spend supporting the normal process of labor, birth and the immediate postpartum/neonatal period. Prevention must be valued equally with intervention as the proper role of the professional maternity care provider. Methods that reduce the need for medical intervention and surgical procedures benefit the childbearing woman and her family, third party payers, the economy, the environment and the goals of a humane society.

The question is simply this: *How much longer will we be content to use an expensive, pathologically-oriented and outmoded 19th century system for our healthy 21st century population?*