**~ Maternal-Fetal Ejection Reflex ~**

Designer Genes program a natural  �labor saving devise�,

the fruit of a physically and psychologically undisturbed labor in a healthy mother

There is a quantifiable biological difference associated with undisturbed spontaneous labor and birth. If one is fortunate enough to be present at a great many �undisturbed� labors, those �designer genes� for spontaneity can be observed as naturally advancing process that combines biological and psychological resources to make human parturition mechanically successful, physically tolerable for the childbearing woman and safe for the about-to-be born baby. It is accompanied by a dramatic increase in childbirth-specific hormones � endogenous oxytocins to stimulate uterine activity, beta endorphins (the source of the �runner�s high�) providing for naturally produced, internal (non-addictive) pain relief for the mother. Maternal hormones also trigger adrenal hormone production in the fetus to prepare it to breathe independently and maintain its body temperature after birth.

This innate potential of normal childbearing physiology for an expeditious labor and birth is central to the midwifery model of care. Understanding it goes a long way towards de-mystifying the normal practice of midwifery and giving it a useful context. It also reveals the problems that arise when trying to provide hospital-based care to this cohort of healthy women who, if undisturbed, will have labors graced by a truly �labor-saving� mechanism -- the spontaneous birth reflex.

In recognition of this phenomenon a French physician by the name of Dr. Michael O�Dont coined the term Fetal Ejection Reflex. Midwives add the word �maternal� to this term (maternal-fetal ejection reflex) to make it evident that the fetus does not, independent of its mother,  �eject� himself from her body but rather it is the mother who permits the freight train of spontaneous energy to run thru her for the purpose of safely (and sanely) liberating her baby from its temporary uterine home.

Dr. O�Dont was attempting to identify the biological mechanism responsible for rapid, apparently easy &/or precipitous deliveries. It explains why after a short active labor a mother could give birth to an 11# baby in just a few pushes and without sustaining any significant perineal trauma.  The normal spontaneous birth reflex is the �physiological� process (biology + psychology) that makes birth mechanically successful, physically tolerable for the childbearing woman and safe for the about-to-be born baby.

The idea of a Maternal-FER implies an innate physiological mechanism similar to a slow motion sneeze, as if a reverse form of peristalsis was triggered. The cervix seems to melt away far faster and easier than expected (for example, a primipara >> 5cm to birth in 43 minutes!) while the reflexive nature of this mechanism efficiently overcomes the usual soft tissue resistance. The advantage of this momentum is "natural sequencing", resulting in efficiency of abdominal muscles pressing the baby down and out ***without being impeded*** or countervailed by a great deal of muscle & soft-tissue resistance. Body structures (cervix and pelvic floor) that normally hold the baby in suddenly relax and open up, the fetus does a free-fall thru the birth canal, the pelvic floor melts way and in the blinking of an eye, the baby comes out crying lustily.

Historically speaking, this propensity of multipara mothers to have their babies �free-fall� through the birth canal is one of the attributes of physiological labor and delivery that gave the earliest obstetrician fits. Drs DeLee and Williams and their colleagues lamented that labors only came in two flavors � too fast and too slow. First-time mothers were so slooow � average labor (starting from 3+ cms) was said to be 15 to 20 hours in Dr DeLee�s 1924 edition of his obstetrical textbook. Then there were the grand multips not even in labor yet who had a sudden spontaneous rupture of membranes and the baby just �washed� out helter-scelter in some inconvinient and inappropriate place before the doctor can get his gloves on or perhaps, even before he arrives.   This element of unpredictability fueled medical efforts to control messy Mother Nature (i.e., normal physiology of parturition). For multips it seems only logical to doctors to bring them into the hospital and induce labor via Artifical Rupture of Membranes (ARM)  so they wouldn�t deliver in the office or parking lot.

A crucial facet of this normal birth reflex seems to be the psychological component, especially the psychological comfort of the mother with her situation. Michael O�Dont described this as creating psychological circumstances for the mother so she �feels secure and unobserved at the same time�. He observed that the birth attendant�s first responsibility is not to disturb the natural process. For many mothers her need to be undisturbed is balanced by an equally powerful need to be in the �right� place and have family members of great psychological importance, as well as the doctor or midwife present, before she can �permit�, at least at a subconscious level, that dynamic labor process to unfold. For those who prefer hospital care, these mothers must have arrived at the hospital before the Maternal-FER can be given free reign. Often this does not seem to require the presence of the doctor as much as admission to the hospital and presence of the nursing staff.

This phenomena is a constant �exception� to the rules of labor as expressed by Friedman�s Curve, which graphically represents labor as a linear process, inexorably slow, innately painful. Most importantly, this linear concept assumes that labor and birth are solely dependent on incremental hard work and ability of the mother to tolerate the pain *rather than* using her internal resources to �facilitate� or surrender to her labor. The picture society has of so-called �normal� labor and delivery is one of incredible effort in which the mother labors with the kind of slow incremental progress reminiscent of climbing a rock face by hammering pinions into cracks and painfully pulling herself up again and again, fighting hour after hour for every inch of forward motion. The maternal-fetal ejection reflex is almost the opposite of that expectation. While it is impossible to predict who will experience this "labor-saving" biological event, many birth attendants have observed that a calm or confident mother is more likely to do so than a fearful, anxious one who feels greatly unsure of herself or is starkly afraid of birth. While no caregiver can program mothers to experience this beneficial reflex, acknowledgement of the pyscho-social/sexual nature of childbirth seems to help greatly to facilitate its appearance.

In an environment that is free of exaggerated & pathological fears of childbirth, the Maternal-FER appears to provide the �grace� that can only be matched in a medical setting through the use of epidural anesthesia. Often (but not always) the M-FER is further facilitated in domiciliary care by submerging the mother in deep water after she has reached 5cm dilatation and letting her and her husband or partner focus together with as few caregiver interruptions as possible ( FHTs q 30 minutes, minimum vag exams or manipulations). Dr O�Dont describes this as permitting the mother to feel secure and unobserved at the same time. Unfortunately this spontaneous birth reflex is easily disturbed and often (but not always) obliterated by medicalization during the intrapartum period.

The Maternal-FER appears to represent in parturition what sex researchers Doctors Master and Johnson identified as the orgasmic plateau, that is to say a state of being during which an overriding internal mechanism triggers a series or sequence of discrete but perfectly timed and attuned events of physiology which fire off in domino fashion when the conditions are right. After reaching this point it seems to occur irrespective of the personal wishes of the individual so blessed. In the case of labor this means that even if uterine contractions seem painful or the mother is clearly anxious, the labor will none-the-less be briskly moving and soon culminate in a NSVD without anesthesia and often, without significant perineal trauma, perhaps even before the doctor or midwife arrives. Under these circumstances it seems even less rare for the baby to be respiritorily depressed.

One theory explaining M-FER is the role of primitive brain in facilitating the spontaneous processes of labor and birth. This theory also identifies as negative the influence of the neo-cortex (dominance of the left-brain or �late for the train� mentality) and a host of institutionally-originating disruptions such as bright lights, loud noises, coming and going or milling about of unfamiliar people, unnatural, anti-gravitational positions and frequent disruptions provided by invasive procedures such as vaginal exams, catherizations, fussing with IV equipment and EFM belts, etc.  For most laboring women the �intensive care� nature of intrapartum nursing in hospitals is  experienced as the exact opposite of feeling �secure and unobserved� � all these nursing and medical ministrations and application of technology signal to the mother the potential for problems or appear to signal that the medical caregivers are worried. The labor women likewise worries about themselves and their baby and feel like a bug under a microscope.

**4 to 48 Hours of Warm-Up Labor**

What interferes with a recognition of this discrete physiological event (M-FER) is that it so often follows anywhere from 4 to 48 hours of piddley prodromal labor or lengthy, even painful latent labor. In planned hospital births a physiologically fast-finish may be preceded by the use of both pitocin and epidural. A longish desultory phase distracts and derails us from appreciating what can only be described as an �order of magnitude� shift up, resulting in an active labor that is many times faster than what was defined by Dr. Friedman as "normal". Because this rapid progress so often comes on the heels of a long, psychologically difficult latent phase, it is not necessarily perceived by either the mother or the midwife (and certainly not by the doctor!) as a �fast birth�.

Like a form of foreplay, this long latency process (�forelabor�) seems to set up the biological and social circumstances so that all the �elements for success�\*\* are simultaneously present (\*\*see addendum at end of document for a list of crucial five factors for success). Latent labor gets everyone gathered, involved and geared up to attend to the biological and emotional needs of the mother and baby. The marriage of biology to psychology with its attendant association to sociology (the right people present and the wrong people not) is necessary for physiological function.

This represents a �systems� event (involving many different organs and emotive systems). This differs from the typical focus of medical care which is on a single physical organ (example the uterus) and/or a single non-mental function such as the progressive dilation of the cervix in labor. The single focus of obstetrical medicine provides a poor foundation for physiological function. When a spontaneous birth reflex is able to be accessed, the latancy period is sooner or latter abruptly replaced by an accelerating labor pattern. Primagravidaes go from 5 or less centimeters to delivery in under 4 hours. A multipara progresses from 4 or less centimeters (or if no vag exam, begin counting from when she was obviously prodromal/early latent labor) to delivery in less than 3 hours.  Unfortunately for most women, the fruit of the undisturbed labor is rarely seen in the modern hospital L&D.

The Maternal-FER offers hope to childbearing women that they can prevail in their goal of having a physiological labor and birth. Knowledge of their potential for being blessed by this labor-saving devise provides all of us with an antidote to the pathological fear of childbirth that has dominated the public dialogue for the last century.

# **Five Elements of success for �normal spontaneous vaginal birth�**

  

1. Healthy Mother/normal pregnancy/spontaneous onset of labor at term

2. Understanding the physiological and psychology of spontaneous labor and birth by both *parents and practitioners*

3. Physiologically appropriate response by family and professional caregivers to the normal physical, biological and gravitational demands of spontaneous labor and birth

4. Psychologically appropriate response by family and professional caregivers to the emotional and psychological needs of the mother to the normal stresses and painful sensations of labor and birth

5. Willingness of the mother to accept pain of uterine contraction and the anxiety of not knowing how much harder the process may be or how much longer the process may take.

�        the absence or severe dysfunction of any of these systems will generate symptoms that will ultimately require medical or surgical intervention which may incidentally lead to iatragenic and nosocomial complications.

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**Conservation of Maternal Effort**

**Through Right Use of Gravity**

Maternal mobility and an upright or vertical posture is important to the bio-mechanics and the psychology of spontaneous labor and birth. It is importance to avoid all maternal postures that result in the childbearing mother lying on their back or bearing her body weight on her sacrum. During first stage lying on the back reduces uterine blood flow, makes uterine contractions more painful and cervical dilation less efficacious and leads to or contributes to fetal distress. During second stage it closes the bony aperture of the pelvis by 20-35% and increase soft tissue resistance resulting in "mattress" dystocia.

During the second stage (all stations above +3 or 4) the best progress and the least maternal effort is achieved when the mother is in a vertical posture. The most favorable accommodation of the irregularly shaped fetal head to the irregularly shaped maternal pelvis is achieved via a combination of maternal mobility (changes of position, walking) and the pelvic enlarging effects of a squatting or lunging positions, in which abduction of the thighs to the side and slightly back against the abdomen increases the intra-abdominal pressure while increasing the pelvic diameter.

**Management of Perineal Stage**: The concept of a "perineal stage" is a functional definition of the latter part of 2nd stage used by many midwives to describe the biological and psychological events from a +four station to the actual crowning of the baby�s head and delivery of shoulders. This is the last of the finally tuned biological events described as the "fetal ejection reflex" by French obstetrician Michael O�Dont.

At a certain time after the cervix is fully dilated the mother experiences a dramatic event in which the body simultaneous opens up (relaxes normal muscle resistance) while forcefully propelling her fetus downward. This reflexive surge efficiently overcomes the usual soft tissue resistance and takes advantage of momentum to press the baby down and out. While the example of gastric emptying (emesis) makes for an unpleasant analogy, in truth it shares the same biological chain of events, except going in the other direction. When the baby�s presenting part is quite low and the pressure of the advancing head triggers the same expulsive receptors as used to move the bowels. To the observer it reminds one of the gastric reflex commonly referred to as the "dry heaves" in which a sudden powerful contraction of the abdominal muscles occurs. A similarly powerfully abdominal contraction causes this dramatic bodily event (pushing) to occur -- often to the surprise of the mother herself.

In some multips the fetal ejection reflex is initiated long before the baby�s head presses on the perineum (perhaps as soon as the cervix approaches full dilation). The baby almost "free falls" through the birth canal and across the perineium in the matter of 1 - 3 pushes. However for most mothers there is more to this reflex that just the physical trigger of cervical dilation and pelvic floor pressure.  Of equally or even greater importance is the psychological component. While it is impossible to predict which mothers will and who won�t experience this "labor-saving" biological event, many birth attendants have observed that a confident mother is more likely to do so than a fearful, anxious one who feels unsure of herself. While no caregiver can program mothers under her care to experience this beneficial reflex, acknowledgement of the pyscho-social/sexual nature of childbirth greatly helps.

**Psycho-social/sexual aspects of expulsive labor** -- creates maternal needs for privacy and a feeling of security which shares many of the same characteristics as the social norm for using the bathroom. These are brought into play by the strong expulsive sensation of 2nd stage in which many childbearing women are, quite naturally enough, convinced that they needs to have a bowel movement. Fear of soiling in public often means that the mother is triggered to use the muscle of her buttocks to hold back in the rectal area while simultaneously using her abdominal muscle in an attempt to push the baby down through the birth canal. This creates a push-pull war of sorts that works against the goal of expulsive labor.

**Facilitating the mother to push:** The goal is to help her push fully while she simultaneously relaxes the gluteal muscles of the buttocks. For many women in late 1st or early 2nd stage labor this is best addressed by suggesting she sit on the toilet for a minimum of 3-6 pushes, right when she first begins to feel "pushy". Sitting produces a body posture sharing many of the same characteristics of squatting. Supplying the mother with 3 or 4 inch prop under each foot helps her maintain good flexion and abduction of the thighs. This comfort measure also reduces the pressure on the under side of her thighs which, if prolonged, will interfere with circulation and contribute to vulvular edema.

Providing the mother with privacy in the bathroom except for the presence of her spouse or intimate family member and/or the midwife/L&D nurse addresses the intimacy needs of the situation. If there is justifiable concern about precipitous birth (a multip), the caregiver can monitor progress by placing a small mirror between the mother�s legs. By shining a flash light at the mirror while angling the mirror appropriately the perineum can be visualized to be certain that she does not inadvertently deliver while on the toilet.

**The creative use of gravity to shorten the 2nd stage reduces the stress on the baby and associated risk of fetal distress**. Use of physiological postures and acknowledgements of the psycho-social/sexual aspects of the mother�s experience also help reduce the number of times she must push and the actual quantify of body energy the mother must expend to give birth to her baby. When a mother pushes while lying in bed on her back she is bearing body weight on the maternal sacrum. This means she must overcome the deleterious forces of gravity which now work against her as the birth canal is a relaxed right angle aiming up towards the ceiling in this position.  This closes the pelvic aperture down by 1/5 to one 1/3 (equal to 1 to 3 cms). The aggregate of these forces means at the very least 1/2 hour, often an hour or more of extra pushing and increased time with expendature of incalculable amounts of finite maternal energy for very little gain.

**Mothering the Mother by husbanding her physical Resources :** The pushing stage comes at the end of labor, when the mother had lost sleep and not eaten for many hours, suffers from fatigue and often is discouraged. It is unkind to ask her to do the hardest physical work ever required by our normal biology (especially if it is a first vaginal birth) under these sub-optimal conditions. According to older obstetrical textbooks ( 1930), the amount of psi (pounds pressure per square inch) required to give birth to a first baby is approximately 120 psi. The uterus on its own produces only about 80 psi, which means that either the mother must use abdominal muscles and gravity to provide the missing 40 psi or the caregiver must pull with forceps / vacuum device at that level of downward torque. When every drop of maternal energy is expended on pushing to baby down to the perineum, there is nothing left for her to use for the perineal stage -- that is, to push the baby�s head and shoulders out and across the perineum. This sets up the situation for the otherwise unnecessary surgical intervention of episoiotomy and its risks of bleeding, infection, prolonged postpartum pain, the need for narcotic medications and the disruption of bonding and breastfeeding that pain and drug use entails.

When mothers are unable to be upright or out of bed due to a medical condition, side-lying is the physiologically appropriate position as the curve of Carus is neutral to gravity when the mother is on her side. While not as effective as upright positions, at the very least side-lying does not require the mother to work uphill against the forces of gravity.

**Side-lying moms & �catching� babies:**  In a side-lying position, the mother�s upper leg can be held up by a family member or helper or it can be placed on a large pillow. In Dr DeLee's 1924 obstetrical textbook there is a photograph of this position in which the caregiver sits on the bed next to the mother and in full contact with the small of the mother�s back and hips. If sitting to the right of the mother, the top (left) hand of the caregiver reaches across and to the side of the mother�s abdomen and down between her legs to the top of the baby�s crowning head, to maintain its flexion with the fingers. The lower  (right) hand is placed palm down on the perineum to lightly support it during the birth of the head and more firmly supporting it during the delivery of the shoulders. A good many times the head is born without causing a perineal laceration, while the shoulders and arms delivers a karate-chop to the perineum. The DeLee side-lying method is superb for managing the delivery of the shoulders, compound arms and the remainder of the baby�s body.

Midwifing -- the verbs

For many years of my life as a mother, L&D nurse and an advocate for improved maternity care I worked within the system to change �the system� � a maternity care system that is and has been dominated by contemporary obstetrical practices with a resulting loss of the verbs of midwifing � the active voice of the verb �to midwife�. Then I became convinced that I as an individual could not possibly change the corporate medical system.

I personally resolved this dilemma, best I could, by staying home from the hospital each time I was in labor until the �last minute�. I had no labor support, no knowledgable woman companion, no guidebook or model to follow, no real �caregiver�. Instead, the �system� held all of the cards and I had to bend my ways to match it. The only realistic and uncontrovertibly �power� I had as a patient of the medical system was to delay my presence. I could postpone or forestall but not free myself from the application of routine (but unwanted & unneeded by me) medicalization. As a pregnant women �thing� were done to you against your expressed wishes and body parts and some aspects of your own body function became a form of public property. Routine medicalization impressed on me, whether I wanted them or not, what were, to me, unnecessary and unwanted medical procedures and intrusive surveillance of my personal body, restrictions on where I can go, what I can eat and drink, the ability to prohibit me from taking in any nutrients by mouth, determining what body posture I would or could assume (for instance being forced to lay down on a stretcher or sit immobile in a wheelchair or be kept in bed). This is what is on is on the line in the conflict between physiological (midwifery) management vs medicalization.

From within the obstetrical system, a triumvirate combination of  �due diligence� and a genuine intent to do good, applied as a series of routine medical procedures. Normal or routine medical care includes sequential taking of blood pressure, blood draws and vaginal exams and the �survailence� both mother and baby which includes a range of invasive, sometimes painful or humiliating such as shaving of pubic hair, soap suds enemas and administration of powerful psychotropic drugs such as scopolamine, total separation from all loved ones, the routine cutting of episiotomies and use of "outlet forceps".  This was the situation in seventies and eighties. In the 1990s it changed to a slightly different forms of intervention such as continuous EFM, greatly expanded use of epidurals, liberalizing the policy on presence of family members and a �private room� that women labor and give birth in the same, non-operative room.

So I concluded to make the best of this bad situation. Instead I would go outside the system and help forge an �alternative� an another options for childbearing women known as the Midwifery Model of Care (MMC), which includes community-based care but is not about elevating home-based birth services as the end all and be all.

Routine Hyper-medicalization of Healthy Woman

with Normal Pregnancies has Got to Stop -- defining the political problems

Community midwives all across the US have been successful in creating and maintaining an alternative to the �usual and customary� obstetrical treatment -- the routine �hyper-medicalization� of healthy women with normal pregnancies.  We counter-offered with �non-medicalized� midwifery care, as if the qualities of 'hyper' and 'non' would some how cancel itself out and leave us with �right balance�, in the Buddhist tradition of �right� livelihood.

Initially we assumed that if we were able to establish midwifery as a �viable alternative�, that midwifery activists had accomplished as much as could be expected. There are now many sources of information (books, Internet, videos, etc) that offer of education on the difference between obstetrics and the Midwifery Model of Care. From the perspective of midwives, it seems as if we�ve done our share to inform and educate and childbearing women must do their part and �vote with their feet� by turning away from the hyper-medicalization by choosing midwifery care. And if they don't, well, it seems only logical to assume that midwives are off the hook. In terms of the politics of midwifery, we want very much to wash our hands of the problem.

However, I am now of the opinion that what seems like an absolution of our responsibilities is actually is a cop out -- it is a deal with the devil in which we trade the ability to legally provide care to 1% of childbearing women while abandoning the remaining 99% of women to an unscientific, dramatically dysfunctional system, only slight impacted upon by the 5% of hospital-based nurse midwifery care. Even this 5% are often inappropriately subjected to unwanted, unnecessary medicalization. Nurses, nurse midwives, junior residents and countless others are locked into a pervasive medical system that does not permit the people actually present to make the primary management decisions based on the scientific evidence and the informed consent choices of the mother. Hospitial-based nurse midwifery is often organized as a form of "physician-extender" and as such, they are required to carry out the agenda of hyper-medicalization.

The obstetrical culture so dominates the entire field of maternity care that its unscientific set of assumptions poisons the water for all caregivers. The nurse (who is a hospital employ) can�t �let� the patient employ many of the best strategies of physiological management, such as non-pharmaceutical pain management or physical mobility because "rules" designed to protect the hospital from the remote possibility that she might fall down and sue.

The professional midwife too frequently finds herself forcing medical intervention on a family doesn't want (or need) it because the midwife's obstetrical supervisor or backup doctor won�t let her continue to provide care if the family does not "agree" (?) to an induction or other medical intervention. �My doctor won't let me� is frequent comment by professional midwives. Pregnant women thought their hospital midwife was an independent practitioner who had the authority to support their choice to have a �natural� birth and were shocked to find out that both they and the midwife were still locked into a dysfunctional and hyper-medicalized obstetrical system.

I think that community midwives have en masse let ourselves be seduced into defining midwifery activism as simply a �home birth issue�.  We let ourselves argue mightily for and about home birth, its safety, the right of women to choose and our right to provide care and for the most part, we have achieved a certain minimum goal � � %. We defend this choice but I believe that is a mistaken allocation of political resources.  The big important issue is that our maternity care system is broken. We do not have a scientific or evidence-based system based on the unique, mostly non-medical needs of each childbearing women. It's nice that 1% of childbearing women can arrange out-of-hospital care of a skilled professional midwife. But it is wrong if this means abandoning the other 99% of women, babies and the third party payors to a dysfunctional, harmful and expensive system.

The problem is the current system defines the �standard of care� differently for each category of caregiver, rather than measuring what is "standard" by the scientifically-based needs of healthy women with a normal pregnancy. The actual skills of the caregiver and the policies, protocols, management strategies, etc of a �standard� and physiologically appropriate response to all the frequently encountered situations of normal labor in a healthy woman should be the same whether you are a doctor or a midwife -- the point is the mother's needs, not the care provider's preferences. No one is arguing against a specific scope of practice for physicians and midwives that is different depending on the training and goals each discipline. It is only logical that midwives would not perform cesarean surgery. But it is equally logical that physicians would have equal training and ability in use of physiological management techniques -- psychological support, non-pharmaceutical pain management, right use of gravity, etc. It should be malpractice to use forceps, vacuum extraction or a Cesarean for second stage dystocia when the mother has never been instructed to push in an upright and vertical position by someone who is familiar with the strategies used to make that successful.

The problem is that obstetrics does not value or even understand physiological management, that individual doctors (and by extension, labor room nurses employed by hospital) don't know how to provide physiological management of normal labor and birth and that the medical-legal system currently defines physiological management as "substandard" care when provided by an obstetrician. This is like assuming that the laws of aerodynamic are different for the pilot of a small, single-engine airplane than for an airliner. Certainly piloting each would include a lots of different skills as the complexity of the two planes is very different but the fundamental laws of gravity and aerodynamics would indeed be the same and failure to recognize this fact of life would be dangerous.

Most people think that whether or not an obstetrician wins a malpractice suit brought against them would depends on some agreed upon set of guidelines based on scientific authorities and evidenced based practice parameters. What most people don�t appreciate is that what is �standard� on obstetrical care (in contrast to "substandard" care) is defined by the very members of the medical profession who is doing the defining. Doctors themselves define what the standard of practice is for their own category of provider (obstetricians, family practice doctors, etc). IF 90% od doctirs twirled around 3 times before doing a vag exam, it would be "negligent" or incompetence for a doctor to "fail" to spin around 3 times before performing this simple procedure. Nothing requires physicians to use evidence-based sources for practice guidelines. So the determination of �standard care� depends on what the usual and customary practice of the practitioner are. The mother may have needed to be upright and mobile to better bring the baby down the pelvis but if she is cared for by obstetrical standards, it is not required � instead IV Pitocin will be used to increase the force of her contractions and if that is inadequate to do the job, vacuum extraction, forceps or CS will be employed � all for want of the simple application of the laws of gravity because doctors don�t "do" midwifery management.

Raising the standards for both hospital and community-based practitioners by bring them closer together in the middle � less over-treatment for doctors and more use of technology and better medical interface for midwives so as to reduce or eliminate adverse events that are the result of under-treatment.