MaternityCare_2.0

Science-based Maternity Care for the 21st Century

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In the early 1900s, there were two very different models of maternity care. One was the physiological model of care used by midwives and general practice physicians. The other was a newly emerging obstetrical model used by members of the obstetrical profession.

Many people recognized the wisdom of having a *single* standard of care for normal childbirth, but couldn't agree on the best form. Each approach had its own strengths and unique abilities. Some thought the best of both methods should be combined to create an integrated model. Others were convinced that traditional methods were out-dated at best, dangerous at worst. They believed it would be unethical not to replace them with the new medical procedures. This was the point of view that prevailed. In 1910 the obstetrical profession decreed that the 'single' standard for normal maternity care should be a strict obstetrical model. That model defined normal birth as a *surgical* procedure that could only be performed by a physician.

The obstetrical model used medical and surgical interventions routinely in normal birth as a precaution, believing that a 'pre-emptive' posture was the safest and most responsible plan of action. For this reason, the obstetrical standard differentiated very little between the routine care of healthy women with normal pregnancies and those with pre-existing diseases or complications. The standard care as provided to both groups of childbearing women was essentially the same. This initial attempt to standardize childbirth for the 20th century could be thought of as '**MaternityCare_1.0'.**

MaternityCare_1.0 ~ Not Right for the 21st Century

MaternityCare_1.0 is not an *efficacious* system, that is, a safe *and* cost effective for providing childbirth services to *healthy* women with *normal* pregnancies. Classifying normal birth (or 'the delivery') as a surgical procedure is *inappropriate* when providing maternity care to healthy women. When normal birth is characterized as a surgical procedure, it must be conducted in a highly specialized surgical environment by a surgical specialist and billed under a surgical billing code. This system eliminates the physiological management of labor and birth and splits the care of healthy women between two different professions (nursing and medicine), making continuity of care impossible. Birth as a surgical produces a very complex system that results in serious legal and social problems for all concerned – doctors, nurses, childbearing families and society in general. A pre-emptive system is enormous expensive.

The current configuration of maternity care was put in place in 1910. However, the health of childbearing women and the abilities of modern medical science were vastly different by end of 20th century. Despite this enormous difference, the idea of an obstetrical model as the standard for all maternity care has never been reexamined. An illustration from the world of computer software

may be useful. The first release of a software program is called the 1.0 version. After being used in the real world by thousands of people, problems begin to emerge and it must be upgraded to remain relevant and to preserve its utility. Unfortunately the 1.0 version of our obstetrically-based maternity care system has never undergone this kind of upgrade.

In the late 19th and early 20th century, life in the US was hard and dangerous for everyone. There was no way to prevent or treat contagious and life-threatening infections like tuberculosis, diphtheria and typhoid fever. Modern diagnostic methods did not yet exist; there were no antibiotics or safe blood products. In particular, childbearing women faced many serious and even fatal dangers. Many of the diseases that affected childbearing women at the turn of the 20th century were associated with poverty, malnutrition, disease, overwork and forced childbearing. As the educational level and standard of living in the United States rose, the situation got better. Advances in maternal-child health in the 20th century are primarily the result of improvements in public health and economic conditions.

The health of the general population improved as the benefits of medical science became more widely available. The most fundamental contributions to maternal-infant health were brought about by public sanitation, better access to education, a better diet, adequate housing, improved working conditions, appropriate access to medical care when needed, the safety net of social programs and access to contraception. Twentieth century obstetrics played an important role for those with complications of pregnancy and childbirth, but was unable to make normal childbirth safer for those who were already healthy.

Now, in the 21st century, the health of the childbearing population is generally excellent. Approximately 70% of childbearing women are still healthy and have normal pregnancies at the end of nine months, a statistic comparable to other developed countries. Even for older mothers, problems associated with delayed childbearing are primarily infertility and prematurity, neither of which are relevant to giving birth normally at term. However the relationship of the obstetrical model to normal childbirth has changed very little since it was standardized in 1910. It still applies a fixed set of obstetrical interventions to both low and high risk women. In 1910 the induction of labor and operative delivery was rare (under 10%) but the rate has *increased* every decade for nearly a hundred years.

At this point in our history, the rate of pregnancy complications is small fraction of what it was in the early 1900s. None the less, the rate of obstetrical interventions has sky-rocketed and is dramatically disproportionate to the rate of complicated pregnancies. In a remarkably healthy population of women in 2004-05, a quarter of all labors were induced. The combined rate of episiotomies, forceps, vacuum extraction and Cesarean sections performed on healthy mothers is *over 70 percent*. The ratio of operative deliveries is even higher for women with complicated pregnancies.

A recent Harris poll of childbirth practices in the US revealed that an average of seven serious medical and surgical interventions had become the norm for healthy women giving birth in the obstetrical system. [Listening to Mothers Survey, MCA, 2002 & 2004]. These finding are confirmed by data collected by the federal government. The use of obstetrical interventions to manipulate labor -- induction or augmentation of labor or scheduling cesarean sections -- can make childbirth more predictable. Since1989, births have become more frequent on weekdays compared to weekends. The question is whether this predictability makes childbirth better for mothers and babies. So far,

the evidence suggests that a very high ratio of interventions are being visited on women who benefit little (or not at all!) and who are sometime actually harmed by medically-unnecessary interventions.

The US Cesarean section rate in 2004 was 29.1%, at a cost of 14.6 **b**illion dollars. Every year **Cesarean section is the single most frequently performed hospital procedure**. Unfortunately, the increasing rate of Cesareans over the last 30 years has not improved perinatal outcomes. Data from several sources identifies the cost of Cesarean surgery to be at least twice that of vaginal birth. The Obstetrical profession predicts that rate of C-section will double in the next generation. Hospitals are beginning to build or remodel their maternity units in anticipation of an expected 50% Cesarean section rate by the beginning of the next decade.

Government statistics currently identify health care expenditures in the US as 1/6 (17%) of our total GDP. The average ratio of GDP devoted to healthcare in other developed countries is significantly less – only 11 to 14%. In America 20% of that hefty healthcare budget is spent on obstetrical services. The most common reason for hospitalization among women is pregnancy and childbirth, with about 4.4 million hospital stays each year due to obstetric conditions (a 1/3 of all hospitalizations). Maternity care accounts for 3.4% of GNP. The cost of maternity care for the healthy portion of the childbearing population is **2.38%** of our total **GDP**.

After a century of obstetrically-based maternity care, the US continues to spend far more on childbirth than any other country in the world. The five countries with the best maternal-infant statistics all employ physiological management as the standard for providing normal childbirth services to healthy women. Despite our extraordinary expenditures of professional time and money, the US is unable to match the better outcomes enjoyed by many other industrialized countries at a *far less* cost. We are 28th in perinatal mortality and 14th in maternal mortality.

Taken together, this double-whammy puts American companies at a distinct *disadvantage in the global economy*. High levels of expensive of interventions and the large number of iatrogenic or nosocomial complications associated with interventions must be added to the cost of the US products and services. This reflects higher insurance premiums to cover the large number obstetrical interventions and to treat mothers and babies with chronic conditions or permanent disabilities resulting from these unnecessary interventions. A 50% Cesarean section rate (which is 2 to 10 times more costly than physiological birth) will not benefit the manufacturing and service industries the US in their attempt to compete successfully in the world market.

Improved Public Discourse & Public Policy Debate

In light of the extraordinary expense associated with MaternityCare_1.0 and the many old and new ways that are known to increases the rate of normal, uncomplicated childbirth, our 1910 system of medicalized care should be reexamined. With this inquiry, many problems that have lead to excessive levels of intervention – particularly the overuse of labor induction and Cesarean surgery -- will become clear and permit us to reverse the current upward spiral of costly obstetrical care.

A spirited public discourse on a more appropriate form of care for health women has become necessary. Public health scientists, journalists, childbearing families and of course physicians and midwives should all participate. This re-examination must start with the decisions made

unilaterally in the early 20th century by obstetricians, as nothing in modern science supports the idea that normal maternity care should be a strict obstetrical model or that normal birth benefits from being conducted as a *surgical* procedure. We need to revisit those odd notions and create a *single* standard of care for normal childbirth that utilizes the strengths of each system. This would deliver on the early promise of the 20th century to finally create an integrated or 'best of both worlds' model – MaternityCare_2.0 as the new standard for the 21st century.

Maternity Care 2.0 ~ The World-Wide Evidence-based Standard

Physiological management is the evidenced-based model of maternity care used world wide. Physiological is: …"..in accord with, or characteristic of, the normal functioning of a living organism" (Stedman's 1995 Medical Dictionary definition of "physiological"). The principles of physiology can be used by all birth attendants and in all birth settings.

Physiological management of labor and birth is associated with the *lowest* rate of maternal and perinatal mortality and is *protective* of the mother's pelvic floor. It has the *best* psychological outcomes and the *highest* rate of breastfed babies. Dependence on physiological principles results in the *fewest* number of medical interventions, *lowest* rates of anesthetic use, obstetrical complications, episiotomy, instrumental deliveries, Cesarean surgery, post-operative Cesarean complications and delayed or downstream complications of Cesareans in future pregnancies.

Physiological management is both *safe and cost-effective*. It takes into account the **positive influence of gravity** on the stimulation of labor, dilatation of the cervix and decent of the baby through the bony pelvis. Maternal mobility not only helps this process move along but also diminishes the mother's perception of pain, perhaps by stimulating endorphins. Effective labor support always addresses the mother's pain, her fears and privacy needs so that labor can progress spontaneously, reducing or eliminating the need for medical interventions, pain medication and anesthesia. Maternity Care 2.0 acknowledges the right of healthy, mentally-competent childbearing women to have control over the manner and circumstance of normal labor and birth.

A long over-due and much needed reform of our national health care policy would integrate these physiological principles with the *best advances in obstetrical medicine* to create a single, evidence-based standard for all healthy women. Physiological management should be the foremost standard for all healthy women with normal pregnancies, used by all practitioners (physicians and midwives) and for all birth settings (hospitals, homes, birth centers). This model of normal childbirth includes the *appropriate use of obstetrical intervention for complications* or at the mother's request.

In a rehabilitated system, obstetricians, family practice physicians and professional midwives would all enjoy a mutually respectful relationship that acknowledged each other as players on the same team – that of cooperatively providing safe and cost effective care. Under this system, the individual management of pregnancy or childbirth 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, or midwife). At present, *who* the woman seeks care *from* (doctor vs. midwife) determines *how* she is cared for. This is illogical in the extreme, just as it is irrational to impose a single standard of obstetrics by uniformly exposing healthy women to interventionist practices.

One crucial factor in the rehabilitation of our maternity care system would be a new, non-surgical billing code for physiologically-managed labor and birth, one that recognizes the value of continuity of care and fairly compensated the caregiver for his or her time. This is in contrast to the current billing code that rewards *procedure-intensive* care and penalizes the kind of time-intensive, one-on-one care that prevents complications, improves outcomes and thus lowers the overall cost of birth-related care and ultimately, the cost to the insurer. The 1910 version of insurance reimbursement may be penny-wise but it is also pound foolish.

At present, care during labor is billed primarily by the hospital for the nursing staff's time. Birth (billed as 'the delivery') is coded as a surgical procedure performed by a medically licensed attendant. Care during the 30-60 minute vaginal birth 'procedure' is disproportionately rewarded, reimbursing the birth attendant many times more than the professionals who provided care during the long hours of labor. And yet, without effective care during labor, a safe normal birth is unlikely to occur. The reimbursement system is out of balance. It needs to be re-examined and corrected.

A second pervasive problem with our 1910 version is a tort law system that currently provides life-long immunity from being sued when an elective Cesarean delivery is performed. The family's right to recover damages for surgery-related complications or death is waived by the patient when she consents to the surgery. Unless the physician commits an *egregious surgical error*, everything else in the cascade of 'normal' intra-operative, post-operative, delayed and downstream complications, including post-Cesarean complications in a subsequent pregnancy, is off limits to litigation. This oxymoronic situation needs to be re-examined and incentives built into the legal system that appropriately favor normal birth *instead* of granting special immunity for performing elective interventions.

Systematic reform is also a major economic issue. In order to retain a competitive edge the global economy, the vast majority of societies depend on the use of physiological principles -- high-touch, low-tech -- and other cost-effective methods to facilitate normal childbirth. The US must also utilize these safe and cost-effective forms of normal childbirth services in order to compete in the world-wide economy. Unfortunately, the art of normal birth was lost in the US, discarded a hundred years ago by an obstetrical profession that saw little value in the physiological process. This situation was made worse by the malpractice crisis, followed by 30 years of defensive medicine.

Every year the number of obstetricians who have stopped attending births rises sharply. This is a combined result of sky-rocketing malpractice costs and baby-boomer generation of physicians nearing retirement. Their natural replacements -- 21st century medical students -- have quite a different relationship to the practice of medicine than previous generations. The current crop of students tends not to see the medical profession as a humanitarian vocation. Instead, a large proportion of today's graduates are choosing specialties with bankers' hours and dramatically reduced 'on-call' schedules. **The steady attrition of obstetrical providers is here to stay**. In another decade, the few obstetricians still in practice and the many perinatologists will be approaching professional midwives, inquiring about a partnership to cover the normal births. We urgently need to upgrade the 1910 'one-size fits all' version to MaternityCare_2.0 – a standard of excellence that blends the best of both disciplines to provide the best possible care to a 21st Century population of healthy new mothers and babies.

Maternity Care 2.0 by the year 2020

Physiological principles, in combination with the *best advances in obstetrical medicine,* would create a single, evidence-based standard of maternity care for all healthy women, to be used by all practitioners -- physicians and midwives -- and in all birth settings -- hospitals, homes, birth centers.

Changes necessary to bring about physiological management as the foremost standard of care:

- **Acknowledgement that normal labor and birth is a single contiguous biological** process that benefits most from the principles of physiological management and continuity of care, unless the *mother herself* requests a medical model of intervention
- A **non-surgical billing code for physiological management** of normal intrapartum events that values the professional's time as highly as it does the performance of medical and surgical procedures
- **Third party payers that fairly reimburse all practitioners** for time spent facilitating normal childbirth, as this type of direct care helps avoid the need for medical and surgical intervention, as well as added costs and complications of medical and surgical procedures
- **Medical educators must teach the principles of physiological management**, in conjunction with experienced professional midwives, to medical students, interns and residents; practicing physicians to routinely utilize these principles and technical skills
- **Hospital labor & delivery units to be primarily staffed by professional midwives**, with spontaneous normal births primarily attended by the hospital midwives; national incentives for experienced L&D nurses who wish to retrain for hospital-based midwifery practice to do so at minimal expense to themselves
- **Tort law (medical malpractice) reforms to be enacted,** so that professional birth attendants are not inappropriately judged by outdated criteria that is not evidence-based; formulation of a new and realistic guidelines for caregiver liability for normal birth

The challenge for the 21st century is to bring about a fundamental **restructuring of maternity care** in the United States that benefits all it citizens, taxpayers and national goals.

Science-based Principle of Physiological Management for Spontaneous Labor & Normal Birth, including the following physiologically-sound practices:

Physiological: "..in accord with, or characteristic of, the normal functioning of a living organism (Stedman's Medical Dictionary – 1995)

1. Continuity of care
2. Patience with nature
3. Social and emotional support
4. Full-time presence / availablity of the primary caregiver during active labor
5. Mother-controlled environment (place) for labor and birth
6. Provision for appropriate psychological privacy (persons present)
7. Mother-directed activities, positions & postures for labor & birth
8. Opportunity for an upright and mobile mother during active labor
9. Recognition of the non-erotic but none-the-less sexual nature of spontaneous labor & normal birth
10. Non-pharmaceutical pain management such as walking, one-to-one care, touch relaxation, showers & deep water tubs, other tradition midwifery strategies
11. Judicious use of drugs and anesthesia when needed (for hospitalized women)
12. Absence of arbitrary time limits as long adequate progress, mom & babe OK
13. Vertical postures, pelvic mobility and the right use of gravity for pushing
14. Birth position by maternal choice unless medical factors require otherwise
15. Mother-Directed Pushing - NO prolonged breath-holding (Valsalva Maneuver)
16. Physiological clamping/cutting of umbilical cord - after circulation between baby and placenta has stopped (average 3-6 minutes)
17. Immediate possession and control of healthy newborn by mother and father
18. On-going & unified maternity care and support of the mother-baby during the postpartum/postnatal period

Physiological management is the science-based model of normal maternity care.

It should be the foremost standard of care for all healthy women with normal pregnancies, regardless of the category of maternity care provider (physician or midwife) and regardless of the setting for labor and birth (hospital, home or birth center).