

Excerpted from another document by Faith Gibson:

Four Studies Contrasting Safety: (1) unattended, (2) lay midwife-attended, (3) professional midwife-attended and (4) obstetrician-attended

Role of Physiologically-based Care for Healthy Women: It is useful to take into account the enormous benefit that physiological management of labor and spontaneous birth contributes to safe maternity care. This form of care is provided by general practice physicians and midwives in those countries with the best maternal-infant outcomes.

For an essentially healthy population, the most *efficacious* form of maternity care is always the method that provides “maximal results with minimal interventions”. This is defined as a *beneficial ratio of interventions to outcomes* for each childbearing woman. It factors in mortality and morbidity rates for mothers and babies both, as well as the immediate, delayed and long-term **cost-effectiveness**. The ideal maternity care system **seeks out the point of balance** where the skillful use of physiological management and adroit use of *necessary* medical interventions provides the **best outcome** with the fewest number of medical/surgical procedures and **least expense** to the health care system.

Statistical data from the US that contrasts four different forms of childbirth services with subsequent maternal-infant outcomes. This information can help the public and policy makers put the issue of safe and effective maternity care into perspective. These studies included a religious group that had no prenatal care and unattended births, and three groups of healthy, risk-screened women who received prenatal care and were either attended by lay midwives, or by professionally-trained midwives or had conventional hospital-based obstetrical services.

The perinatal mortality statistics in the following paragraphs *include lethal birth defects*, which are about 1 per thousand births. In the US, the majority of middle and upper-class women use ultrasound and prenatal testing to detect congenital anomalies and generally **terminate these pregnancies** during the pre-viable phase. For economically-advantaged populations, this reduces the number of births with lethal abnormalities and subsequent infant mortality. These pre-viable pregnancy terminations must also be taken into account when comparing perinatal mortality statistics between the four groups.

Public healthy officials with the W.H.O. generally believe that Caesarean delivery is only necessary to save the life of either the mother or baby in approximately 5% of all pregnancies. They estimates that a medically-justified **Caesarean surgery rate in developed countries should ideally be no more than 10%, certainly no higher than 15%.**

Study #1: Unattended home births in a religious group in Indiana that **rejected medical care** under all circumstances – no prior diagnosis or treatment of chronic medical problems, no risk-screening of mothers during pregnancy, no prenatal care, no trained attendant during childbirth and no emergency transfer of complications to a medical facility (a situation not unusual for rural part of the developing world) [1]

Out of 344 births, the unattended group had **6 maternal deaths and 21 perinatal losses.**

The baseline mortality rate for unattended childbirth was *one maternal death per 57 mothers* or MMR of **872** per 100,000 live birth (92 times higher than Indiana’s MMR for the same period) and **one perinatal loss for every 16 births** or PNM rate of approximately 45 per 1,000.

Study #2: Planned home births in an impoverished and medically-indigent population who were **attended by experienced lay midwives**. These maternity patients were risk-screened by a public health officer prior to receiving midwifery care. However, state laws did not authorized lay midwives to carry oxygen or emergency anti-hemorrhagic drugs (Pitocin) or to suture perineal tears, but midwives were able to appropriately transfer patients with complications to a local hospital.

The lay midwife-attended group had **no maternal deaths and 3 perinatal losses per 1,000**

Note: This study also reported the perinatal mortality rate for medically indigent women in the same rural regions of North Carolina who *delivered unattended*, often because local hospitals turned away laboring women who did not have the prescribed 'cash in hand'. These unattended births had a dramatically increased perinatal mortality rate ranging from 30 to 120 stillbirth and neonatal deaths per 1,000.

Study #3: Planned home birth in a general population attended by **nationally-certified direct-entry (non-nurse) midwives**. All clients were risked-screened and received prenatal care; those with medical or pregnancy complications referred to medical services. Professional midwives monitored maternal vital signs and fetal heart tones during labor. They were also authorized to carry emergency supplies such oxytocin (Pitocin), IV fluids, oxygen, neonatal resuscitation equipment and to suture perineal lacerations. Twelve percent of PHB patients were transferred to the hospital during labor or after birth, the majority of whom were first-time mothers. Cesarean rate was under 4% for PHB women hospitalized during labor.

This group had **no maternal deaths and 2.6 perinatal losses per 1,000**

Group # 4: Hospital-based obstetrical care for low and moderate risk women -- labor attended by the professional nursing staff, routine use of continuous electronic fetal monitoring, IVs and epidurals; **birth conducted as a surgical procedure by an obstetrician**. Medical **intervention rate** for this group was **99%**; aggregate **surgical intervention rate was 70%** (episiotomy, forceps, vacuum extraction and Cesarean section). The **CS rate was approximately 25%**.

This group had **no maternal deaths and a perinatal mortality rate of 1.7 per 1,000**.

Studies of obstetrically-managed hospital birth in low-risk women give a range of PNM from a low of **0.79 to 4.1**. **Note:** The routine use of prenatal screening and termination of affected pregnancies in the hospital population results in an artificially low rate of PNM due to in reduced rate of babies with lethal anomalies who were carried to term.

Study #1: **Perinatal & maternal mortality in a religious group avoiding obstetric care** -- Am Jour Obst Gyne 1984 Dec 1: 150(7):926-31

Study #2: **"Home Delivery and Neonatal Mortality in North Carolina"**, Burnett *et al*; JAMA, December 19, 1980, Vol. 244, No. 24, p. 2741-2745

Study #3: **Outcomes of planned home births with certified professional midwives: large prospective study in North America**; Kenneth C Johnson, senior epidemiologist; BMJ 2005;330:1416 (18 June), doi:10.1136/bmj.330.7505.1416

Study #4 Perinatal MR for planned hospital birth reflects a **consensus of scientific literature & CDC stats**

☞ Comments ☞

As can be seen from these statistics, the both ends of this spectrum are associated with a particular set of problems.

The **total absence of medical and maternity services**, whether by religious or personal choice, poverty or cultural lack of access, can turn the otherwise normal biology of pregnancy and childbirth into a lethal condition. When modern biological sciences are absent or inaccessible, this statement is also true for all segments of the population. Wherever the ill and injured have no access to modern forms of preventative and therapeutic medical care, the mortality rate becomes unacceptably high.

The problems associated with interventionist obstetrics for a healthy population is **drastically increased economic cost and a high level of nosocomial and iatrogenic complications *without a statically significant improvement in outcome***. Routinely medicalizing normal childbirth in low and moderate risk mothers dramatically increases the rate of medical interventions, operative deliveries, re-hospitalization, nosocomial complications (such as MRSA infections) and 2 to 13-fold increases morbidity associated with the high rate of surgical delivery.

This includes anesthetic accidents, surgical injury, hemorrhage, emergent hysterectomy, infection, cerebral stroke and maternal death. Downstream complications of post-Cesarean reproduction include secondary infertility, tubal pregnancy and miscarriage. Delayed risks in post-Cesarean pregnancies includes increased rate of breech babies, placental abnormalities (previa, percreta & abruption), stillbirth and uterine ruptures prior to labor and/or before a scheduled repeat C-section can be carried out.

High-tech, high-cost, highly interventionist obstetrical care for healthy women does not appear to improve overall mortality rates. Institutionally-based care improved perinatal mortality ever so slightly (approximately 2 per 1,000) as compared to the lay attended group (3 per 1,000), but this tiny gain was accompanied by greatly increased expense and a Cesarean section rate over 31%.

When the delayed and downstream morbidity and mortality associated with the increased rate of Cesarean surgery is factored, the increased maternal mortality eliminates even this small difference. Professionally-trained and equipped midwives had a perinatal mortality rate of 2.6 per 1,000, which was mid-way between PHBs with lay midwives and hospital-based obstetrical care. Childbearing women cared for by professional midwives had **2 to 10 times less obstetrical intervention** than medicalized hospital care and a *6-fold decrease* in Cesarean section (under 4%).

☞ Conclusion ☞

As measured by the outcome statistics of the four groups -- unattended, lay midwife-attended, professional midwife-attended and obstetrician-attended -- the most *efficacious* strategy for preventing maternal and perinatal mortality and morbidity consists of **three simple aspects of maternity care that balance safety and cost-effectiveness:**

- (1) Access to **risk-screening, prenatal care** and **referral** to medical treatment whenever necessary
- (2) The presence of an **experienced birth attendant** during labor, birth and immediate postpartum
- (3) **Access to hospital-based services for complications** or if requested by the mother

Of the three options, the physiologically-based (i.e., non-medical) care of **lay midwives demonstrated the most extraordinary level of cost-effectiveness and reduction in both maternal and perinatal mortality** when

compared to unattended birth. Informally trained lay midwives provided childbearing women with access to risk-screening during the prenatal period and the referral of serious medical or pregnancy complications to obstetrical services. They monitored the mother and unborn baby during active labor and arrange transferred patients with complications to obstetrical services. Simple access to prenatal care and physiological management of the intrapartum by lay midwives reduced perinatal mortality by 20 to 40 times as compared to the mortality statistics for unattended women and lowered the maternal mortality rate to level equal to that of hospital-based obstetrical care at a small fraction of the expense.

Lessons for 21st Century Evidence-based Maternity Care: Physiologically-based childbirth services as provided by family practice physicians and professionally-trained midwives increases the successful nature of this safe, effective and cost-effective model of care by bringing evidenced-based maternity care into the mainstream of our healthcare system.