Obstetrics and Midwifery

Obstetrics and midwifery are two distinct but overlapping fields of medical knowledge and practice which focus on the care of the pregnant and parturient (laboring) woman. Obstetrics focuses on the problems and difficulties of pregnancy and labor; midwifery emphasizes the normalcy of pregnancy while acknowledging the vulnerability associated with the reproductive process. Midwifery arose from the social and physical support women traditionally have given to one another, while obstetrics developed gradually as a combination of the medical traditions practiced in ancient Greece and Rome and the rise of modern anatomical research and surgery developed in premodern Europe. Obstetrics had its greatest impact at the end of the eighteenth century as the fundamentals of parturition, including its anatomy, physiology, and pathology, were recognized and as large numbers of male medical practitioners began to deliver babies. Anesthesia and antisepsis advanced nineteenth-century obstetrics, but it was not until the third decade of the twentieth century with the advent of sulfa drugs that infections related to medical intervention during childbirth ceased to be the leading cause of maternal death. In the twenty-first century, obstetrics is increasingly technological in its orientation and is focused on the pathology of pregnancy while midwifery continues to maintain its emphasis on the normalcy of pregnancy and the importance of providing pregnant and parturient women with practical and emotional support.

Antiquity and the Medieval and Early Modern Period

In ancient Greece and Rome, birth was usually an all-female event which affirmed the parturient's status as mother of the patriarchal family, especially when she produced a male child. Laboring women prayed to Asclepias and Artemis for support. Midwives came from a range of socioeconomic backgrounds, and they enjoyed varying amounts of prestige according to their training. In Greece, male and some female healers who were trained in empirically based knowledge derived from Hippocratic medicine enjoyed high social status, attended births, and sometimes worked together during both normal and
problem deliveries. A midwife untrained in Hippocratic medicine relied on a variety of folk nostrums as well as on charms and amulets.

In situations where a baby's abnormal birth position slowed its delivery, the birth attendant turned the infant *inutero* or shook the bed to attempt to reposition the fetus externally. A dead baby who failed to be delivered would be dismembered in the womb with sharp instruments and removed with a "squeezer." A retained placenta was delivered by means of counterweights, which pulled it out by force. Pain relievers and sedatives were employed only for excessive maternal suffering due to birth complications; pain associated with normal labor was seen as productive and as a part of the birthing process.

Soranus, a second-century Greek physician practicing in Rome, published a gynecological treatise in which he discussed obstetrical theory and proposed protocols for normal and abnormal births. He introduced a procedure called *podalic version*, which was a method of delivering a baby that presents in the transverse position by reaching for the leg within the womb and pulling the infant out feet first. Soranus also described the use of a birthing stool and listed the duties and skills of the midwife. Sometimes he advised using a forceps to assist with difficult births.

Historians speculate that the infant and mortality rates in antiquity were probably similar to premodern rates, even though women in classical Greece married before the age of twenty while the average age of marriage for premodern women was twenty-five. Later marriage correlated to a lower overall risk to mother and baby. Puerperal fever caused some maternal deaths, while malaria and tuberculosis constituted special risks, especially due to the lack of modern hygiene and efficacious drugs.

During the medieval and Renaissance periods, childbirth was a home-centered social event involving the collaboration of the birthing mother, her female relatives, and a midwife. Birth was a *rite of passage* for the woman that affirmed her fertility and new status as a mother. In spite of the biblical injunction that "in sorrow thou shalt bring forth children" (Genesis 3:16) midwives administered narcotic or painrelieving herbs and wine. Catholic mothers also sought solace in praying to St. Margaret, the patron
saint of pregnant women, while Protestant women prayed directly to their Lord without the intercession of saints.

To hasten delivery, a midwife massaged the mother's belly and genitalia with oil. Bloodletting at an ankle vein also might be administered. During labor, the pregnant woman moved constantly about the lying-in room, trying to find a comfortable position from which to give birth. Birth stools were common, especially in Germany. For abnormal deliveries, the skilled midwife had several options: she could burst the amniotic sac to induce labor, she could tie cloth to an impacted fetus and pull, or she could reposition the infant internally or externally using manipulation or abdominal massage. In instances of breech presentations, stillbirths, twins, or other problems caused by the mother's pelvic deformities, a surgeon was called in as a last resort. Sometimes he would have to dismember and extract the fetus with crochet hooks and knives to save the life of the mother.

From the late thirteenth to the late eighteenth century, a midwife's social background, occupational status, and skill level varied within and among countries. Her workload, pay, and range of tasks also varied. Popular and learned images of the midwife ranged from ignorant and unskilled to skilled and respectable. The modern notion of the midwife as witch had very little basis in reality. Court records document that midwives were rarely accused of witchcraft. In fact, ecclesiastical and municipal authorities entrusted midwives with a variety of medical and legal responsibilities. With increasing frequency, the midwife was called upon to testify as an expert witness in cases of contested pregnancy, infanticide, virginity, and rape; to mediate domestic squabbles; and to attest to religious conformity, illegitimate birth, or infanticide.

Religious concerns motivated the first official regulation of midwives in 1277 (at the Trier Synod). Midwives were enjoined to learn how to perform an emergency BAPTISM when there was no time to call in a priest. Beginning in the sixteenth century, municipal authorities regulated midwives under the aegis of the emerging male medical hierarchy. A midwife's morals, religiosity, and sometimes her skill were evaluated. In England and the United States, however, midwives received only sporadic regulation.
Studies by Roger Schofield, B. M. Wilmott Dobbie, and Irvine Loudon estimate that maternal mortality rates between 1400 and 1800 were between 1 and 3 percent. Most often, women died in childbirth due to protracted labor caused by a narrow or deformed pelvis, fetal malpresentation, postpartum hemorrhage, or puerperal fevers. The health risk was renewed at each pregnancy. Since a woman averaged five pregnancies, 10 percent of these women died during or soon after childbirth.

During the sixteenth and seventeenth centuries, the systematic study of human anatomy, the recovery of ancient medical knowledge, and a renewed interest among male medical practitioners in human reproduction encouraged the growth of obstetrics and obstetrical innovation. The advent of printing technology facilitated the spread of knowledge. The French surgeon Ambroise Paré (1510–1590) reintroduced podalic version in 1550. Other talented surgeons, as well as a few midwives, published obstetrical texts that included protocols for normal and abnormal labor and deliveries. Indeed, the French paved the way for the English surgeons and surgeon-apothecaries of the next century to become birth attendants for the aristocracy.

In the eighteenth century in England and Scotland, surgeons and physicians refined their methods for recognizing and managing normal and abnormal labor and delivery, both with and without instruments. Accurate illustrations of the gravid uterus were described for the first time. Scottish surgeon William Smellie (1697–1763) made the use of forceps during delivery a viable option; in 1752 he introduced a new and improved instrument that avoided the uterine and vaginal mutilation which an earlier prototype had often caused. In spite of these advances, however, pregnant women remained reluctant to call a surgeon because of his traditional association with death; moreover, husbands and moralists expressed concerns that a male presence during labor could easily compromise a woman's virtue. By the end of the eighteenth century, however, men attended 50 percent of all deliveries in many parts of England. The tendency was similar in France, and it became increasingly true in the United States as well.

The founding of maternity hospitals for poor women contributed to the eventual predominance of obstetrics as a medical specialty. Hospitals provided an endless supply of patients on which males could practice birthing techniques for normal and abnormal
deliveries. In addition, famous surgeon accoucheurs and physicians set up private lecture courses for an all-male clientele on obstetrics, surgery, and dissection. A "hands-on" learning approach improved the students' skill and confidence.

The rise of obstetrics had a mixed effect on midwifery. Some midwives clung to their traditional ways. Others embraced the new science and sought retraining. National policies also shaped the contours of midwifery practice. While American and British midwives were rarely regulated and essentially were excluded from the hospitals and proprietary schools that employed the new techniques, instruments, and obstetrical knowledge, European midwives were re-educated and regulated under the auspices of local and national authorities. In France, for example, the fear of depopulation induced King Louis XV in 1759 to sponsor Madame du Coudray to educate rural midwives. Utilizing obstetrical mannequins and an illustrated manual, she trained an estimated ten thousand peasant women to deliver babies using advanced life-saving methods.

**The Modern Period**

Women's search for a painless childbirth experience created a decisive turning point in the history of obstetrics. The discovery of drugs such as ether, morphine, and chloroform between 1792 and 1834, and scopolamine in 1902, made pain manageable. The movement for "twilight sleep," or labor under anesthesia, began in Germany in the early twentieth century and soon spread to England and America. Upper- and middle-class women abandoned their midwives in order to be anesthetized with scopolamine and other drugs during childbirth. The potential danger that accompanied the use of anesthesia required a physician in attendance in a hospital setting. Women's erratic behavior under the anesthesia compelled their attendants to tether them to the hospital bed. Moreover, the mothers' delirious state made them totally unaware of the birth process. In addition, many infants of anesthetized mothers suffered from neonatal depression. By 1900, in the United States and Britain 50 percent of physician-assisted births involved the use of chloroform or ether in a hospital. A 1997 report by British researcher Irvine Loudon found that hospital deliveries rose from 24 percent of all births in 1932 to over 54 percent in 1946. No longer seen as interlopers in an all-female
life cycle event, male physicians began to exercise more control over the prenatal and birth processes.

Following the pain management revolution, a newly emerging group of physicians who called themselves obstetricians instituted protocols for hospital birth that became routine in the United States and in many other Western countries. Anesthesia, forceps delivery, shaving the pregnant woman's pubic area, administering an enema and refusal of any food or drink for the mother prior to labor, episiotomy, lithotomy position for birth, and administering pitocin or other drugs to induce and control labor all became routine. Fetal monitoring, scanning, and IV infusions for the mother also became standard practice by the end of the twentieth century, as did cesarean section and birth induction, especially in the United States.

Ironically, as the obstetrical revolution gathered momentum between 1900 and 1930, maternal mortality rates increased. These deaths were almost always the result of "childbed" or puerperal fever, an infection of the female genital tract caused by the bacterium *Streptococcus pyogenes*. While the appearance of maternity hospitals in the eighteenth century already had raised the problem of puerperal fever to epidemic proportions, the fever proved fatal in hospitals as well as in many home deliveries, even after the acceptance of the germ theory of disease in the late nineteenth century. Consequently, Loudon reports in his 1997 book that the risk of dying in childbirth in 1863 and 1934 were virtually identical. The high death rate was the result of lax antiseptic practices and poorly trained birth attendants who engaged in unnecessary and dangerous obstetrical interventions, especially forceps deliveries. This fact became evident when national differences were taken into account. In his 1992 published report, Loudon found that in 1935 the rate of obstetrical interference in Holland was 1 percent and in New York 20 percent. When interference occurred, the death rate due to sepsis (infection) was 40 per 10,000 births, while the rate for spontaneous deliveries was 4 per 10,000. Maternal mortality rates did not decrease until the virulence of the streptococcus bacterium decreased and until the introduction of sulfa drugs after 1935. Maternal morality rates continued to fall after World War II with the development of safe blood transfusions, treatments for toxemia, and the introduction of ergometrine, a drug which prevents hemorrhaging after childbirth.
Cesarean Section

The rationale for birth by cesarean section initially was religious. The operation was performed when the mother appeared to be dying in order to ensure that the fetus could be baptized. During the nineteenth century cesarean section gained wider acceptance as antiseptics, anesthesia, aseptic surgery, and new kinds of uterine sutures greatly improved the survival rates of mother and child. The discovery of a purified form of penicillin in 1940 further reduced infection, uterine rupture, and other pathology.

In the United States, successful cesarean section techniques resulted in a steep increase in that form of delivery. Jane Sewell found that in 1970 the U.S. cesarean rate was about 5 percent; by 1988 the rate had reached nearly 25 percent. Judith Pence Rooks found that in 1990, the cesarean birth rate in the United States was about double that of many European countries. Efforts to reduce this rate in America because of maternal health risks have succeeded somewhat. In 1994 the rate fell to 21 percent from a high of 23 percent in 1992. The reduction has been attributed to a reduced number of same-patient cesarean sections after repeated challenges to the statement "once a cesarean section always a cesarean section."

Premature Birth

The invention of the incubator in France in the 1880s constituted a major advance in the field of what is now called neonatology. The first hospital specializing in the care of premature infants opened in Chicago in 1923. Since home birth was still the norm, parents were reluctant to have their child stay in a hospital to undergo experimental treatments. This changed dramatically during the 1960s when major advances in assisted breathing technology, improved nursery equipment, new surgical techniques, innovative INFANT FEEDING methods, and new therapeutic drugs made neonatology a viable subspecialty within PEDIATRICS. Since the 1960s medical advances have increased substantially the survival rates of premature and low-weight-for-gestational-age infants.
Prenatal Care

Routine prenatal care is a relatively recent phenomenon. Its effectiveness in ensuring the health of mother and child varies by country and within the United States by class and ethnicity. In Europe, where all citizens are protected by a national health care system, prenatal care is standard and usually performed by midwives. Women from all races and ethnic backgrounds tend to avail themselves of these services, develop few health problems, and experience premature delivery infrequently. Due to the lack of universal health care in the United States, however, the availability and usage of prenatal clinics vary tremendously. Healthy, educated, middle-class women who have planned pregnancies are more apt to visit their physicians or midwives and to follow their advice. Women who are disadvantaged and lack access to prenatal care and/or are ambivalent about having children tend to have a higher rate of preterm deliveries and other health-related problems. Cultural and social reasons inhibit such women from taking advantage of prenatal services even when they are free and accessible. African-American women deliver low-birth-weight babies at a rate twice as high as white women. Some studies on prenatal care in the United States reinforce the advisability and efficacy of the European model for prenatal care: low-income, high-risk, and/or African-American women who have access to nurse-midwifery care at prenatal clinics as opposed to standard prenatal care from obstetricians have better birth outcomes.

Infant Mortality

INFANT MORTALITY rates reflect the overall welfare and sanitary conditions of the population. In premodern Europe, one out of every four or five children died during their first year of life, and almost one child in two failed to survive to the age of ten. Social class has remained a key factor in determining infant mortality rates; according to experts, this is unlikely to change. In contrast to maternal mortality rates, infant mortality declined throughout the Western world from the early twentieth century until the mid-1930s. This trend suggests that there is no close link between maternal and infant mortality.
Midwifery from 1900 to the Present

Between 1900 and 1930, the rise of obstetrics and the medicalization of birthing challenged the identity and autonomy of European midwives. These challenges occurred amid falling birth rates, obstetrician shortages, challenges from public health care workers, and economic crises. Midwives responded in a variety of ways. Swedish midwives acquired the training and right to use forceps, while midwives in other European countries acquired new medical skills to help them compete with physicians. By contrast, during the same period, American midwives' lack of organization, political power, and economic resources made it extremely difficult for them to defend themselves against the medical profession. Physicians labeled them as incompetent and ignorant in spite of many contemporary studies that contradicted these charges. A few notable exceptions included the continued practice of some immigrant midwives in the North and the founding of the Maternity Center Association in New York (1918) and the Frontier Nursing Service in Kentucky (1925) which trained nurses to become midwives for the poor. In almost all other instances, obstetric nursing practiced by registered nurses in hospitals under the supervision of physicians replaced midwifery until the rise of the alternative birth movement of the 1960s and 1970s.

At the beginning of the twenty-first century, obstetrics and its perception of pregnancy and childbirth as potentially pathological and dangerous continues to dominate Western culture. Midwives who work in hospital settings also have been influenced by this view, although by and large they are trained to view birth as a normal and healthy process. While midwives play a much larger role in the care of pregnant mothers in Europe than in America, the medicalized model of birth has gradually permeated those countries as well.

The midwifery model of pregnancy and childbirth as a normal and healthy process plays a much larger role in Sweden and the Netherlands than the rest of Europe, however. In the latter nation, one out of every three births takes place in the home. The safety and cost-effectiveness of national health care insurance combined with support of a home-birth tradition has allowed the Dutch midwife to enjoy greater autonomy vis-à-vis the medical profession than midwives in almost any country. The Dutch infant mortality
rate in 1992 was the tenth-lowest rate in the world, at 6.3 deaths per thousand births, while the United States ranked twenty-second. Swedish midwives stand out as well, since they administer 80 percent of prenatal care and more than 80 percent of family planning services in Sweden. Midwives in Sweden attend all normal births in public hospitals and Swedish women tend to have fewer interventions in hospitals than American women. Midwives in the Netherlands and Sweden owe a great deal of their success to supportive government policies.

American midwives made a comeback in the late twentieth century after their earlier decline. A consumer and feminist revolt against over-medicalized birthing led to a resurgence of interest in self-taught or apprentice-trained midwives for home births, called "lay" or "direct-entry" midwives. Despite gaining legal recognition in some states, direct-entry midwives remain on the medical fringe.

Certified nurse-midwives who also are registered nurses with postgraduate training in midwifery have enjoyed greater acceptance. Middle-class and feminist women who demanded a more natural birth experience in a "safe" but "homey" hospital environment created the alternative birth movement, in which nurse-midwives played an important role. Shortages of physicians in the 1970s also encouraged the federal government to support nurse practitioners and nurse-midwives to staff the newly-funded family planning centers for the poor. At the beginning of the third millennium, certified nurse-midwives enjoyed almost universal legal recognition throughout the United States. Data demonstrate that their expertise results in equal or better outcomes for low-risk pregnancies. Between 1980 and 1995, U.S. policy makers considered nurse-midwives as a potential low-cost solution to lowering the nation’s persistently high infant mortality rate, in part linked to the inability to pay for obstetrical care of many poor, high-risk pregnant women.

Obstetrics plays a life-saving and life-affirming role for many women and children who face various kinds of medical complications and emergencies. However, its emphasis on pathology has overshadowed other customs and practices related to pregnancy and childbirth. While a medicalized birth is a rite of passage, it reinforces the rational and scientific values of Western medicine, relying excessively on technology and on the
authority of the physician. Critics of technologically dependent and depersonalized obstetrical approaches to pregnancy and childbirth point to the massive amount of data obtained from clinical trials and cross-cultural studies. These data support the view that many aspects of the low-technology, "natural," and health-promoting model implicit in midwifery is not only more cost-effective, but also can offer equal or better outcomes for low-risk mothers and their offspring. Moreover, the midwifery approach to childbirth provides the pregnant woman with a variety of ways to support her own emotional and physical health as well as that of her child.

**BIBLIOGRAPHY**


**INTERNET RESOURCES**
