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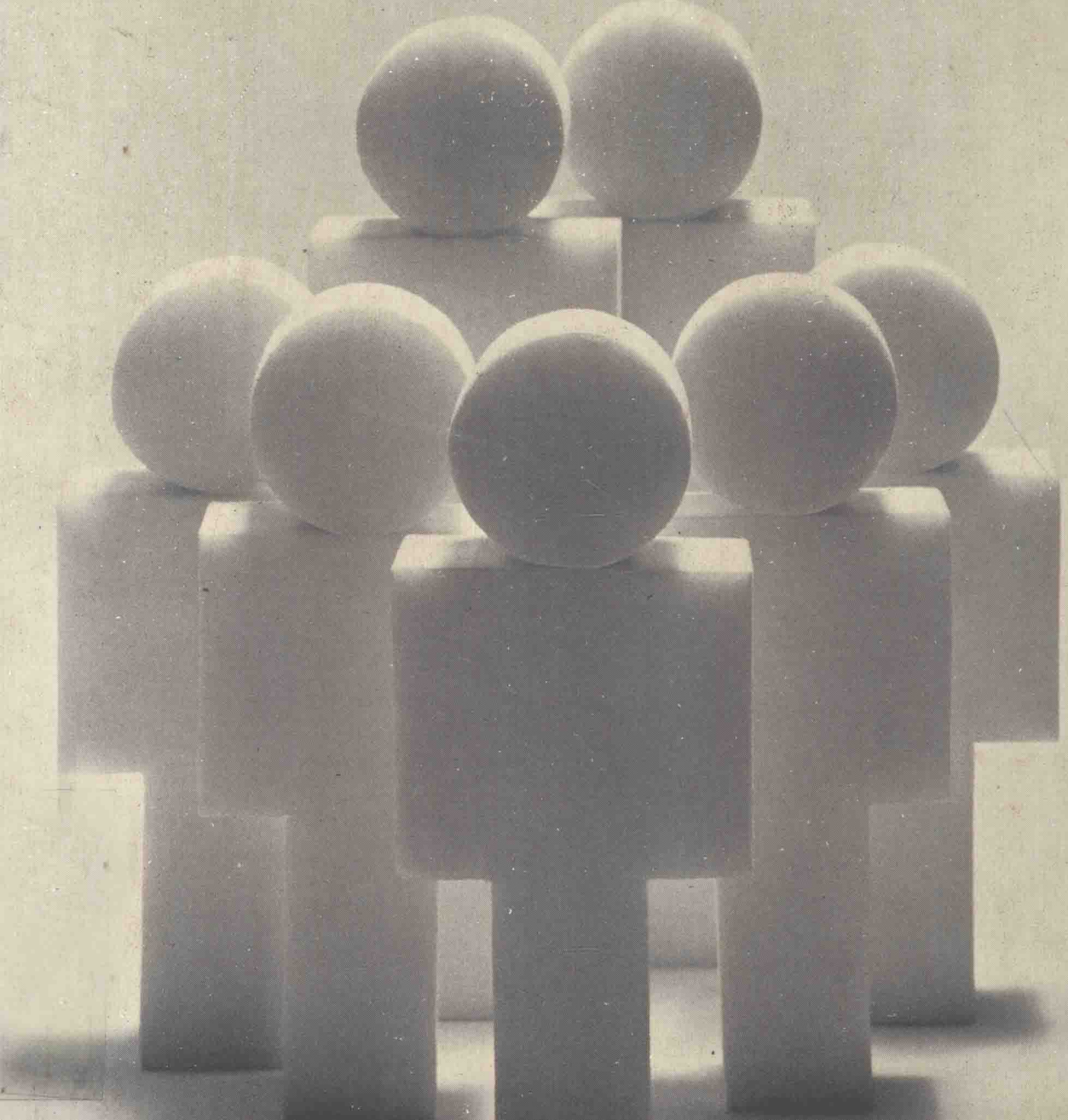

The Childbearing Family: A Nursing Perspective

MARY ANN MILLER, R.N., M.S.N.
Assistant Professor, School of Nursing, The University of Pennsylvania, Philadelphia

DOROTHY A. BROOTEN, R.N., M.S.N.
Associate Professor, Department of Baccalaureate Nursing, College of Allied Health Sciences Thomas Jefferson University, Philadelphia

Illustrated by Donna Nicolo, B.S.N.

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To Elizabeth Miller,
without whom half of this book would not have been possible

To Gary Brooten,
whose love and support made the other half possible

To Lisa and Lars,
the most patient, understanding, and important children in the world

Preface

THE EXPANSION AND COMPLEXITY of today's nursing practice demand the soundest of basic foundations for the practitioner. We have written this book to satisfy the need expressed by our many students, as well as observed by us, for a textbook on nursing care of the childbearing family—one that builds on the knowledge of the natural, social, and behavioral sciences which the undergraduate and graduate student brings to each clinical course.

We have not treated this specialty as an isolate but rather have identified principles that are common to all nursing practice. We have organized the material to provide a basic foundation in this area of nursing, to answer the student's "whys" without needless repetition of facts, to provide understanding as well as a challenge not only for students but for current practitioners as well. It is our hope, therefore, that more classroom time can be profitably spent discussing alternative approaches to providing nursing care for new parents, their babies, and their families and discussing relevant research and its application in clinical situations.

In this regard, the text begins with a consideration of the history of, and the current practices in, the care of the childbearing family, basic concepts of human sexuality, and a thorough review of female and male reproductive systems. A complete presentation of the options available to a couple during their reproductive years is given in the chapter on contraception, infertility, and therapeutic abortion. Aspects of the entire reproductive process are presented with their physiological and psychological bases and their related nursing implications. The importance of the nursing process, the family concept, and the role of the father is emphasized throughout the text.

We wish to alert our readers that occasionally in the text the nurse is referred to as "she." The term is used only for editorial convenience and does not reflect in any way our philosophy concerning men in nursing or, more specifically, male nurses practicing in the specialty.

We would like to pay special tribute to Donna Nicolo, our illustrator, for her invaluable services and for the tremendous amount of energy and skill she brought to her work. We would also like to acknowledge the efforts of many others who helped so much in the preparation of this text: Pauline Holt and Patricia Yost, for typing the manuscript; David Przestrzelski, for proofreading and critical comment; Marsha Whinston, for many hours in the library; JoAnn Jamann, for technical assistance; the Public Relations Departments of Thomas Jefferson University and Pennsylvania Hospital; Colonel Skinner of Booth Maternity Center; representatives of Mead Johnson Laboratories; and the publishers and authors who gave their permission for selected illustrations.

We would also like to acknowledge the efforts of the staff of Little, Brown and Company, especially Sarah Boardman and Kathy O'Brien, who demanded, queried, and encouraged p.r.n. If it had not been for the support we received from our families, friends, colleagues, and students, the book would never have become a reality. We thank all of you.

M. A. M.
Philadelphia *D. A. B.*

Contents

Chapter 1 Trends in Childbearing

BROADLY INTERPRETED, *obstetrics* refers to all aspects of reproduction and the childbearing process—conception and contraception, pregnancy, labor, the postpartum period, and whatever pathology may be involved. It extends from an understanding of intrauterine development to an appreciation of the consequences of world population growth. The practice of health care personnel working within this discipline is aimed at the ideal that every pregnancy end in a healthy mother, baby, and family unit. Since this is not always a possibility, health care personnel try to prevent deviations from health or at least recognize them at an early stage and prevent undesirable consequences or minimize their ill effects as much as possible. As a result, they promote the optimal physical and emotional well-being for each member of the family unit.

HISTORICAL PERSPECTIVE

In order to appreciate the present trends in childbearing, one should have some understanding of their historical precedents. The term *obstetrics* is derived from the Latin verb *obstare,* meaning to protect or to stand by. *Obstetrix* referred to the midwife or the woman who stood by the expectant mother and gave her aid. Actually *midwifery,* rather than *obstetrics,* was the most widely used term until the latter part of the nineteenth century in both the United States and Great Britain. In England today the two words are used synonymously.

Historically, most women were delivered with the assistance of midwives whose knowledge was based purely on experience. When complications developed, medicine men or priests were called upon to pray over the mother. It is not surprising that childbirth was associated with mystery and superstition.

In the ancient Greek, Roman, Hindu, and Egyptian cultures, Hippocrates and others began to write the theory of obstetrics. Although medieval times saw a decline in the progress of obstetrical knowledge and practice, midwives continued to perform deliveries. Women gave birth while sitting on special stools or obstetrical chairs (Figure 1-1).

From the seventeenth to nineteenth centuries further advances were made in the science of obstetrics. The first modern cesarean section was performed, puerperal fever was described, and obstetrical forceps and the use of chloroform as an anesthetic were introduced. Even greater strides have been taken in the twentieth century. Between 1900 and 1910, antepartal care became an organized part of the medical and nursing supervision of mothers. Statistics began to be compiled and groups were established to study and to remedy high infant and maternal mortality. In 1912

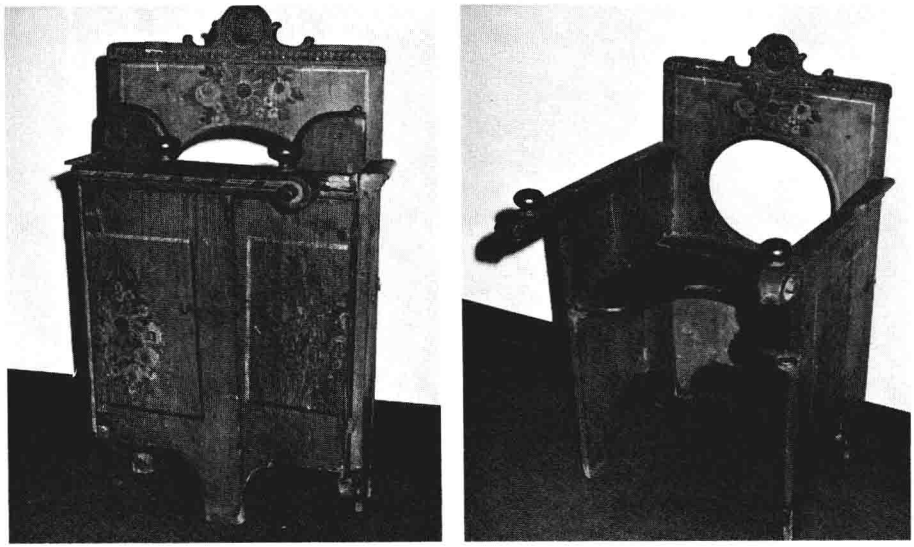

Figure 1-1. Birth chair used by early midwives. The chair was folded and carried on the midwife's back as she went from house to house assisting with deliveries. (Courtesy of Thomas Jefferson University, Philadelphia, Pa.)

the Children's Bureau was established by the United States government to conduct research and provide education to promote the health and welfare of children of all ages. In the 1920s, the Frontier Nursing Service was established in Kentucky and the Margaret Sanger Research Bureau was founded for planned parenthood and infertility research and assistance.

During the 1930s, a part of the Social Security Act, administered by the Children's Bureau, extended services for infant care to local areas. Maternity clinics, prenatal classes, premature care centers, and "well baby" clinics were established. Public health nursing services were provided for pregnant women. Improvements during the 1940s and 1950s, which had a dramatic effect in lowering maternal mortality, included the development of blood transfusions, antibiotics, the increased number of hospital deliveries, and the rising standards of hospital care.

MATERNAL AND INFANT CARE PROGRAMS

In the past decade the number of neighborhood prenatal clinics has increased, high-risk clinics have been established, and programs have been developed for pregnant women who are unable to afford medical care. In 1963 in the United States, Maternal and Infant Care (MIC) programs were funded under Title V of the Social Security Act, with the purpose of providing health care to high-risk pregnant women and, following delivery, to their newborn infants. The projects have been set up in large and middle-size cities and in rural areas where there are few doctors in private practice or where clinics are overcrowded. Federal funding meets up to 75 percent of the operating costs. The woman, depending on her financial situation and overall physical condition, receives care without cost or pays only a portion of it.

Populations served by these programs have reported decreases in maternal and infant mortality, in premature births, in low birth weight babies, and in the number

of pregnant women delivering without prenatal care. The number of women returning for postpartum and family planning visits has increased, as has the number of women seeking prenatal care early in pregnancy.

Communities, in addition to establishing MIC programs, have developed increasing numbers of neighborhood health centers. These centers include on their staffs nonprofessionals from the community, who are able to contribute its perspective when the needs of the consumers are considered and appropriate services are planned.

Other factors have also resulted in better services for pregnant women and reduced mortality and morbidity for them and their babies. Improved methods of anesthesia and analgesia, more sophisticated use of x-ray and ultrasonic diagnostic tools, and generally improved standards of living and sanitation have all played a part in these advances. Better education of health personnel has resulted in specialized training for physicians and nurses. Nurse midwives, as well as clinical nurse specialists, are being increasingly utilized.

VITAL STATISTICS

Birth Rate and Fertility Rate

Statistics often provide clues regarding the magnitude of certain problems or trends in population growth. The birth rate is always of interest to those predicting the need for obstetrical personnel. This rate has shown rather steady decreases during the last decade (Table 1-1). There is some evidence to suggest that the decline in the birth rate in the United States may be approaching a reversal [7]. This is based on the rapidly rising proportions of young women who have not yet had any children.

Maternal Mortality

A statistic which is of particular concern is that of maternal mortality (Table 1-2). Since the 1940s there has been a marked decrease in maternal mortality in the United States, Canada, and most of Western Europe. Over the last 20 years there has been a decline of 80 percent in maternal deaths in the United States. Many factors are responsible for the tremendous fall in the maternal death rate. Most of them have already been mentioned: use of blood transfusions, antibiotics, better standard of living, better education of health practitioners, and more widely available antepartal care.

Maternal deaths resulting from the childbearing process (pregnancy, delivery, post partum) are stated in terms of the number of deaths per 100,000 live births (Table 1-3). Many of these deaths are caused by preeclampsia/eclampsia, hemor-

Table 1-1. Birth Rate in the United States per 1000 Population

1940	1945	1950	1955	1960	1965	1970	1972	1973
19.4	20.4	24.1	25.0	23.7	19.4	18.4	15.6	15.0

Source: U.S. National Center for Health Statistics. *Vital Statistics of the United States.* Washington, D.C. (published annually).

Table 1-2. Maternal Mortality in the United States (per 100,000 Live Births) from Deliveries and Complications of Pregnancy, Childbirth, and the Puerperium

Deaths	1940	1950	1960	1965	1968	1970	1971[a]	1972[a]
Maternal deaths	376.0	83.3	37.1	31.6	24.5	21.5	20.5	24.0
White deaths	319.8	61.1	26.0	21.0	16.6	14.4	—[b]	—[b]
Nonwhite deaths	773.5	221.6	97.9	83.7	63.6	55.9	—[b]	—[b]

[a]Preliminary.
[b]Not available.
Source: Modified from U.S. National Center for Health Statistics. *Vital Statistics of the United States.* Washington, D.C. (published annually).

rhage, or infection. Heart disease is not officially recognized as a statistical category among the causes of maternal mortality, but it is related to a significant number of maternal deaths. Maternal mortality varies with the age of the woman. Increased age is also often related to the number of previous pregnancies; the effects of the two appear to be additive. The increased incidence of hypertension and a greater tendency to uterine hemorrhage are causative factors. Maternal mortality also tends to increase in the very young pregnant women, who are more subject to a variety of complications. The optimal age for childbearing seems to be between 20 and 24 years of age.

One of the most serious problems in maternity care in the United States is the markedly higher maternal mortality among nonwhite women and those in rural areas. These women often receive care which may be inferior in quantity as well as quality. Since few health personnel choose to practice in rural and poverty areas, deliveries may not be properly attended. Pregnant women who live in urban poverty areas may have their care provided in great measure by large institutions, and that care may be depersonalized as a result. This may, in itself, discourage early and

Table 1-3. Maternal Mortality in the United States (per 100,000 Live Births) by Age, Race, and Cause of Death

	1957–1958			1967–1968		
Age/Cause	White	Nonwhite	Total	White	Nonwhite	Total
All ages	26.9	108.3	39.2	18.1	66.6	26.3
Under 20	18.0	60.0	27.5	13.0	35.3	19.2
20–24	13.0	55.5	19.5	10.1	45.5	15.4
25–29	20.0	98.5	30.0	13.5	66.0	20.3
30–34	37.5	180.5	56.5	28.7	109.8	41.3
35–39	66.5	272.0	94.5	51.2	179.0	72.7
40–44	109.5	382.5	147.5	100.1	250.2	126.8
All causes	26.9	108.3	39.2	18.1	66.6	26.3
Infection	3.0	8.5	4.0	3.4	7.2	4.0
Preeclampsia/ eclampsia	6.5	31.5	10.0	3.0	13.5	4.8
Hemorrhage	5.5	19.5	7.5	2.7	7.3	3.5
Ectopic pregnancy	1.5	10.5	3.0	1.0	7.4	2.1
Abortion	3.0	21.0	6.0	2.3	13.4	4.2
Other	7.5	19.5	9.0	5.7	18.0	7.8

Source: Statistical Bulletin of the Metropolitan Life Insurance Company, Vol. 53. New York, June 1972.

Table 1-4. Fetal Mortality in the United States per 1000 Live Births (Fetal Deaths [Stillbirths] for Which Period of Gestation Was 20 Weeks [or 5 Months] or More, or Was Not Stated)

Deaths	1950	1960	1965	1968	1970	1971	1972
Fetal deaths	19.2	16.1	16.2	15.8	14.2	—[a]	—[a]
White deaths	17.1	14.1	13.9	13.8	12.4	—[a]	—[a]
Nonwhite deaths	32.5	26.8	27.2	25.6	22.6	—[a]	—[a]

[a]Not available.
Source: Modified from U.S. National Center for Health Statistics. *Vital Statistics of the United States.* Washington, D.C. (published annually).

regular attendance, although there may also be other problems with lack of transportation, inadequate baby sitting arrangements, fear, lack of understanding about the necessity of care, or long waiting periods. Lower socioeconomic status may be accompanied by poor living standards, poor nutrition, or increased stress, any of which can increase a woman's chances of a complicated pregnancy. It does not take much thought to conclude that many of the above factors can be easily remedied by interested health personnel.

Perinatal Mortality

Perinatal mortality is the sum of the fetal and neonatal death rates, or the number of stillborn infants and neonatal deaths per 1000 total births.

A fetal death (or stillbirth) is said to have occurred when the period of gestation is 20 weeks or more or the fetus weighs 500 grams or more and is born without any sign of life—no heartbeat, respiration, or movement. (The loss of a fetus up to 20 weeks of gestation or weighing less than 500 grams is referred to as a spontaneous abortion—see page 422.) This death rate (per 1000 live births), which is related to the quality of care before and during birth, is still high (Table 1-4). Improvements in prenatal care and fetal monitoring may significantly reduce the fetal death rate in the future.

Neonatal death rates are relatively high, although significant reductions have occurred (Table 1-5). More than half of the neonatal deaths (deaths of live-born infants up to 28 days of age) occur during the first day of life, which emphasizes the importance of careful observation and accurate assessment of the newborn's condition. Premature birth remains the most frequent cause of neonatal death; central nervous system injuries, whether from hypoxia or trauma, and congenital malformations are also significant factors.

Table 1-5. Neonatal Mortality in the United States per 1000 Live Births (Infants under 28 Days Old, Exclusive of Fetal Deaths)

Deaths	1940	1950	1960	1965	1968	1970	1971[a]	1972[a]
Neonatal deaths	28.8	20.5	18.7	17.7	16.1	15.1	14.3	13.7
White deaths	27.2	19.4	17.2	16.1	14.7	13.8	12.9	12.3
Nonwhite deaths	39.7	27.5	26.9	25.4	23.0	21.4	20.8	20.6

[a]Preliminary.
Source: Modified from U.S. National Center for Health Statistics. *Vital Statistics of the United States.* Washington, D.C. (published annually).

Table 1-6. Infant Mortality in the United States per 1000 Live Births (Infants under 1 Year Old, Exclusive of Fetal Deaths)

Deaths	1940	1950	1960	1965	1968	1970	1971[a]	1972[a]
Infant deaths	47.0	29.2	26.0	24.7	21.8	20.0	19.2	18.5
White deaths	43.2	26.8	22.9	21.5	19.2	17.8	16.8	16.3
Nonwhite deaths	73.8	44.5	43.2	40.3	34.5	30.9	30.2	29.0

[a]Preliminary.
Source: Modified from U.S. National Center for Health Statistics. *Vital Statistics of the United States.* Washington, D.C. (published annually).

Infant Mortality

The infant death rate (calculated per 1000 live births) includes deaths of infants under one year of age, exclusive of fetal deaths. This rate is decreasing gradually, as can be seen in Table 1-6. Most infant deaths occur during the neonatal period.

GENETIC COUNSELING

Recent accomplishments in genetic counseling have helped to reduce infant mortality and morbidity. Refinements in chromosome studies and in biochemical and tissue culture methods have greatly improved our ability to diagnose, treat, and advise families on genetic matters. From a sample of amniotic fluid, it is possible to detect all major chromosomal abnormalities and well over 30 inborn errors of metabolism. With this information, couples at risk can be better informed when they decide whether or not to have children. They may choose to conceive, have the amniotic fluid of the fetus tested for abnormalities, and then choose to continue the pregnancy or not, depending on the results. This advance has enabled couples who in the past would not have chosen to have children to go through the childbearing process.

Genetic counseling has had other benefits as well. Serious problems in interpersonal relationships between a couple are averted by informing them that a genetic trait is an unfortunate coincidence of parental genotype and is not related to habit, conduct, or misconduct. This information should help to dispel guilt feelings; the knowledge that all persons are carriers for a variety of disorders likewise lessens their anxiety. This knowledge also helps to decrease in the extended family any hostility or feelings that the couple should not bear children.

For purposes of counseling, a genetic history is taken. The age, sex, and past and present health of the father, mother, siblings, and all close relatives of the couple are recorded, and a pedigree chart is compiled. The age at death and cause of death are noted for those relatives who have died. It is also important to record how the diagnosis of cause of death was made (e.g., biopsy, clinical examination, or biochemical test) and the age of onset of the genetic disorder in each family member. (Siblings may not yet be affected because they are too young.) Based on this information, the couple is counseled by reviewing its special problems and explaining the genetic prognosis and the alternatives open to them.

Birth defect monitoring systems are in effect in Canada, Great Britain, Finland, Sweden, Norway, Hungary, and Israel. Recently, the United States has begun establishing such a system. Data on approximately 230 different kinds of birth defects

will be collected from one million births per year in 1200 short-term hospitals in the United States. The information will be computerized and reported quarterly by the Center for Disease Control in Atlanta. This system should enable the detection of any unusual pattern in the occurrence of birth defects, such as regional outbreaks that might be linked to drugs, viral infections, radiation, pollutants, or other environmental causes. It is hoped that such patterns can be detected in time to minimize the risk of these birth defects' reaching epidemic proportions.

FETAL MONITORING

In addition to monitoring the incidence of birth defects, in the last two decades health care personnel have become increasingly experienced in monitoring and evaluating the status of the unborn. Fetal maturity can be measured by obtaining a sample of amniotic fluid and testing for the lecithin-sphingomyelin (L/S) ratio, fat cell content, and creatinine and bilirubin levels. Maturity can also be determined by using ultrasonic examination to measure the biparietal diameter of the fetal head. Functioning of the fetoplacental unit can be ascertained by testing estriol levels in a 24-hour collection of the woman's urine or by using the oxytocin challenge test. During labor, fetal monitoring equipment can be used to follow the well-being of the fetus.

NEONATAL INTENSIVE CARE UNITS

After birth, the newborn continues to be observed very carefully. Recent changes in the care of high-risk neonates have resulted in the development of intensive care nurseries. This organized intensive care has led to a decrease in mortality among the neonates and fewer serious handicapping conditions among the surviving infants [6]. The development of a number of medical subspecialties, such as neonatology and perinatology, has provided highly prepared and highly skilled personnel to care for high-risk infants in these intensive care units.

Because such skilled personnel are still limited in number and because such units require rather expensive equipment, it has been strongly recommended that the sites for neonatal intensive care units be chosen carefully and that each one be large enough for efficient and effective service. Unnecessary duplication and uneven distribution have been a problem, and little consideration has been given to actual community needs [4]. Regionalization obviously would ensure better use of available resources. Its lack of fragmentation would also increase our knowledge about the relationship of the methods of treatment to the outcome of this type of care.

Since nurses are responsible for making the majority of observations and carrying out most of the treatment for infants in these units, it is essential that these nurses are adequately prepared and that they have a high degree of clinical expertise. The same degree of preparation is necessary for nurses who work in the obstetrical intensive care units that are being established for the treatment of high-risk pregnant women.

THE FAMILY CONCEPT IN CHILDBEARING

More attention is now being paid to the response of the total family to the pregnancy experience. The expectant father is just beginning to receive the attention he deserves. He or a close friend or relative is encouraged to become involved in childbirth preparation classes. He is an essential member of the health team, giving emotional and physical support to the woman during pregnancy and labor (Figure 1-2). He should be permitted to accompany the woman to the delivery room, where they share in the birth of their baby. In some instances he may even participate in the actual delivery. He should be able to be present when the baby is fed in the hospital and to participate in the infant's care. If there are other children in the family, they should be able to visit their mother during this time. Anxiety levels are kept at a minimum for both mother and children when such visits are possible.

Rooming-in is a desirable option for many families. This arrangement permits parents to see and care for their baby whenever they want. Usually visitors are limited; the father is encouraged to help care for and feed the infant (after he washes his hands and puts on a gown). Policies regarding rooming-in vary from hospital to hospital. In some hospitals the baby remains with the mother for 24 hours a day; in others he is returned to the nursery during the night. In some institutions the physical plant is specifically designed to accommodate mothers who desire rooming-in. In other hospitals existing facilities can usually be easily modified to provide this service.

Some obstetricians are consenting to do deliveries in the home, where the mother can readily receive emotional support from the father and other family members during the birth process. Home deliveries are usually less expensive than hospital

Figure 1-2. Father thoughtfully supports mother during labor and awaits the birth of their child. (Courtesy of Booth Maternity Center, Philadelphia, Pa.)

deliveries, and there is also less danger of mother and newborn acquiring hospital-borne infections. The main disadvantage of home delivery is the lack of emergency services, equipment, techniques, and educated personnel, which are available in the hospital. However, in the minds of some parents this is outweighed by the advantage of home delivery—the ability to be together in familiar surroundings during the birth of their baby.

The current trend toward primary care nursing will undoubtedly encourage a spirit of unity as the parents and their family members relate to the same nurse throughout the childbearing process. The continuum of care begins when the nurse first meets the parents in the clinic or doctor's office, and continues as she follows them through the pregnancy, labor, delivery, and postpartum period, and makes home visits when necessary. This approach is similar to the continuity of care currently provided by the nurse midwife.

NURSE MIDWIFERY

The first nurse midwives in the United States were trained in England and were first employed by the Frontier Nursing Service in 1925. By 1931 the first school for nurse midwifery had opened in New York City, but professional nurse midwives did not enter the organized system of health care until 1955. The United States has been slow to acknowledge the role of nurse midwives and to utilize their services, possibly because the profession has had to outgrow the reputation of the old "Granny midwives," nonprofessionals whose practice was based on experience rather than education.

The last decade has witnessed the growth of a spirit of collaboration and cooperation among health professionals. The nurse midwife is increasingly seen as the teammate of the doctor. In many instances the pregnant woman is seen initially by both the doctor and the nurse midwife. If her condition is not complicated in any way, she may choose to have the nurse midwife follow her throughout her pregnancy and labor. The nurse midwife will deliver her baby and attend to her postpartum and family planning needs, including home visits. The doctor is available for consultation throughout the childbearing process.

The nurse midwife often provides additional services for the parents, such as individual counseling and general health education, arranging for semi-reclining positions during delivery, helping with immediate breast-feeding after birth, and urging the presence of the father or other close relative to support the mother. Parents who have had contact with a nurse midwife usually find the experience beneficial and request the same type of service again. In some groups of pregnant women cared for by nurse midwives, there has been a decrease in the rates of prematurity and neonatal deaths [3].

The American College of Nurse-Midwives is the professional organization that sets the standards for quality care by midwives. It also provides guidelines and accreditation for educational programs and issues a certifying examination. In the 1950s there were five or six such programs; today there are 16 nurse midwifery programs that prepare registered nurses to become certified. Eight of them lead to a