

IOM Calls for More Research on Preterm Births

The cost of extra medical care and lost productivity from this rising problem exceeded \$26 billion in 2005.

BY MARY ELLEN SCHNEIDER
Senior Writer

More than 500,000 infants or about 12.5% of infants born in 2004 in the United States were preterm and the rate of preterm births has risen by about 30% since 1981, according to a new report from the National Academy of Sciences' Institute of Medicine.

Preterm birth, defined as any birth that occurs at less than 37 completed weeks of gestation, disproportionately affects women in certain racial, ethnic, and socioeconomic groups. For example, in 2003, nearly 18% of African American women had preterm births, compared with 11.9% of Hispanic women and 11.5% of non-Hispanic white women, the Institute of Medicine (IOM) report said.

"This is a growing problem that can result in significant consequences for families and for society as a whole," Dr. Richard E. Behrman, chair of the IOM committee that produced the report, said during a press conference. "Yet preterm birth is not receiving the attention and funding necessary to fully understand the causes and consequences and to identify ways to reduce the number of preterm deliveries."

Infants delivered preterm are at greater risk for a variety of health and developmental problems than full-term infants but there are also significant economic costs associated with preterm births. The cost of medical care in infancy, maternal care, early intervention services, special education, and lost productivity from preterm birth added up to more than \$26 billion in 2005, according to the IOM report. And

this is likely to be a conservative estimate, said Dr. Behrman, who is executive chair of the Pediatric Education Steering Committee for the Federation of Pediatric Organizations Inc., in Menlo Park, Calif.

In addition to defining the scope of the problem, the IOM report outlines a multidisciplinary research agenda aimed at improving information on the causes and treatment of preterm birth. The report calls on the federal government and private institutions to do a better job on collecting preterm birth data and to increase research that will lead to better identification of women at risk for preterm labor.

Although there have been significant improvements in treating preterm infants, there has been comparatively little success in understanding and preventing preterm birth, Dr. Behrman said. In effort to address some of those gaps, the IOM committee made a series of recommendations for public and private researchers. Some of the recommendations include:

► **Multidisciplinary research centers.** The National Institutes of Health and private foundations should establish integrated multidisciplinary research centers to focus on better understanding the causes of preterm birth and health outcomes for women and infants, the IOM committee recommended.

► **Ultrasound use.** Professional societies should encourage the use of ultrasound before 20 weeks' gestation and establish standards of practice for training person-

nel to improve the reliability of ultrasound data, the IOM committee recommended. These efforts are important to gain accurate measures of gestational age, according to the report.

► **Infertility treatments.** NIH, CDC, and other agencies should support research into how fertility treatments can increase the risk for preterm birth. The report also calls on professional societies to establish guidelines aimed at reducing

the number of multiple gestations, such as single embryo transfer and restricted use of superovulation drugs. The Society for Assisted Reproductive Technology and the American Society for Reproductive

Medicine, which have already issued guidelines on the number of embryos that should be transferred per cycle, announced that upcoming revisions to their guidelines should help to further reduce the incidence of multiples and preterm births associated with assisted reproductive technology.

► **Identification and treatment.** Researchers should focus on ways to identify and treat women who have an increased risk of preterm labor, such as studying known markers of preterm labor and potential new genetic markers that could lead to the creation of an "individualized composite assessment of risk." Better methods are needed to diagnose preterm labor, assess fetal health, and arrest labor, the report said.

► **Perinatal data.** National Center for Health Statistics, part of the Centers for Disease Control and Prevention, should collect and report national perinatal data, the IOM committee recommended.

► **Etiologic and epidemiologic studies.** Public and private funding agencies should support research into the etiologies of preterm birth, the report said. The IOM committee also urged agencies to promote research that would simultaneously examine multiple risk factors for preterm birth instead of looking at risk factors individually.

► **Health disparities.** NIH and other agencies should examine the causes of racial, ethnic, and socioeconomic disparities related to preterm birth and devote resources to developing prevention strategies, the IOM committee recommended.

The report is a "call to arms" for the federal government to devote significantly more resources to preterm birth, Dr. Charles Lockwood, professor and chair of the department of obstetrics and gynecology and reproductive sciences at Yale University, said in an interview. Dr. Lockwood, who was one of the reviewers of the IOM report, said a 10-fold increase in current government spending on preterm birth would be a good start.

The IOM report "elevates the seriousness of the problem," Jennifer Howse, Ph.D., president of the March of Dimes said in an interview. The report, which was cosponsored by the March of Dimes, is a realistic assessment of prematurity in the United States, she said.

Although the March of Dimes endorsed the recommendations in the report, the group also called on Congress to pass pending federal legislation that would authorize more federal research into preterm birth. The Prematurity Research Expansion and Education for Mothers who deliver Infants Early Act or PREEMIE bill (S. 707/ H.R. 2861) was introduced last year and was passed by the Senate in August. ■

Copies of the IOM report are available online at www.nap.edu.

Premature Birth Leading Cause of Infant Death in United States

BY ROXANNE NELSON
Contributing Writer

SEATTLE — Preterm birth is the most frequent cause of infant mortality in the United States, accounting for one-third of infant deaths in 2002, according to data presented at a meeting of the Society for Pediatric and Perinatal Epidemiologic Research.

Prematurity remains a major cause of infant morbidity and mortality in the United States, and rates continue to rise. Across the board, the rate of premature births rose 13% between 1992 and 2002, with seven states showing increases of 30% or higher, according to the March of Dimes.

"As of yet we do not have good predictors and prevention for preterm birth," Dr. William Callaghan said in an interview.

"We decided to reassess the contribution of preterm birth to

infant mortality, in light of the strong connection between prematurity and infant death and the rising rates of preterm birth," explained Dr. Callaghan, a senior scientist in the Maternal and Infant Health Branch, Division of Reproductive Health, at the CDC.

Although about two-thirds of infant deaths occur in those born at less than 37 weeks' gestation, fewer than 20% of infant deaths are classified as being

due to preterm birth using the standard National Center for Health Statistics' classification of "leading cause of death."

This seeming contradiction can be explained, Dr. Callaghan said.

"Among all infants who died, 65% were born preterm. However, just because the association exists does not mean that being preterm was necessarily the cause of death."

Infants born at less than 32 weeks' gestation and who weighed less than 1,500 g accounted for 88% of 9,596 deaths attributed to preterm birth.

As an example, if a preterm infant with a lethal congenital anomaly dies, one cannot say with any certainty that the death was caused by preterm birth or by the congenital anomaly.

Dr. Callaghan explained that he and his coauthors took a very conservative strategy and looked only at the 20 leading causes of infant death. Of 27,970 records in the linked birth/infant death file for 2002, the 20 leading causes accounted for 22,273 or

80% of all infant deaths. Within this group, they assessed the contributing role of preterm birth for each of the causes of death that are embedded in the standard categories.

The methodology was broken down into three basic steps to determine whether the cause of death was actually related to prematurity. First, the cause of death had to be statistically associated with preterm birth. If preterm infants contributed to at least 75% of the mortality due to a specific cause, the death was considered as potentially due to preterm birth.

Second, information about the condition had to be sufficient in order to determine if preterm birth actually led to that condition, or if the condition designated as the cause of death led to preterm birth.

Finally, it had to be determined

whether the infant who died from the proposed cause was actually preterm.

Not surprisingly, the earliest infants had the highest rate of mortality, said Dr. Callaghan. Infants born at less than 32 weeks' gestation and who weighed less than 1,500 g accounted for 88% of the total 9,596 deaths attributed to preterm birth.

"If you look at all infant deaths in total, preterm births account for 34% of them," Dr. Callaghan said. "But if you look at infant deaths confined to the 20 leading causes, then that rate is 43%."

The majority of the infants die within the first week of life, with two-thirds of these deaths occurring during the first 24 hours after birth. "Prevention of preterm birth, especially at the earliest gestations, is crucial if we are going to further reduce the infant mortality rate," he said. ■