Evidence Report

Chapter 1. Introduction

Purpose of Report and Target Audience

This report provides a framework for comparing the harms and benefits of delivery options for women with prior cesarean delivery (CD). The information is designed to help consumers, providers, payers, and policymakers in decision-making about repeat cesarean or trial of labor (TOL).

Evidence-based Approach

An evidence report focuses attention on the strengths and limits of evidence from published studies about the effectiveness and/or harms of a clinical intervention. The development of an evidence report begins with a careful formulation of the problem. In this phase, a preliminary review of the literature and input from patients, clinicians, experts, and payers ensures that the scope of the project addresses clinical questions and issues that arise in everyday practice. An analytic framework is developed and used to identify the patient populations, interventions, health outcomes, and harms. Studies that measure health outcomes (such as maternal and infant mortality) are emphasized over studies of intermediate outcomes (such as nonreassuring fetal tracing). Studies providing evidence of a direct association between an intervention (elective repeat cesarean delivery [ERCD]) and health outcome (such as infant death) are said to provide direct evidence and are given greater weight than studies that provide indirect evidence.

An evidence report also emphasizes the quality of the evidence, giving weight to studies that are appropriately designed to answer a question and meet high methodologic standards that reduce the likelihood of biased results. To compare two different treatments or management strategies, the results of well-done, randomized controlled trials (RCTs) are regarded as better evidence than results of cohort, case-control, or cross-sectional studies. These designs, in turn, are considered better evidence than uncontrolled trials or case series. On the other hand, to assess a diagnostic test or prediction tool, certain observational study designs can provide the highest-quality evidence.

An evidence report pays particular attention to the generalizability of efficacy studies performed in controlled or academic settings. Observational studies that reflect actual clinical effectiveness in unselected patients and community settings can provide information that is more generally applicable than studies of highly selected subjects. In the context of developing clinical guidelines, evidence reports are useful because they define the limits of the evidence and clarify when the assertions about the value of the intervention are based on strong evidence from clinical studies. The quality of the evidence on effectiveness is a key component, but not the only component, in decisionmaking about clinical policies. Additional criteria include acceptability to physicians or patients, the potential for unrecognized harms, and cost-effectiveness.

Background and Significance

Discussions about vaginal delivery after prior CD first appeared in the literature in 1916. Cragin, who is attributed with coining the phrase “once a cesarean, always a cesarean,” described cases of women surviving vaginal birth after cesarean (VBAC).[1]

With the development of safer surgical techniques and ancillary services (e.g., blood typing and transfusion, antibiotic therapy), the risk of CD decreased. By 1980, 16.5 percent of deliveries were conducted by cesarean. This was a marked increase from the rate of 5.5 percent in 1970.[2] As cesarean rates increased, national interest arose in reducing the rate of repeat cesarean, the leading indication for CD.[3] The National Institute of Child Health and Human Development (NICHD) convened a Consensus Development Conference in 1980 to assess why cesarean rates were rising and to determine whether CD resulted in improved fetal outcomes. It was determined that TOL after prior low transverse cesarean posed low risk to fetus and mother, but more data with larger numbers were needed. After 1980, VBAC rates rose. A series of highly publicized articles suggested that VBAC was associated with higher risks of uterine rupture[4] and maternal[5] and perinatal morbidity.[6] Currently, a crisis in malpractice rates is decreasing the availability of maternity care providers and potentially limiting options for patients.

Burden of Condition

In 2000, 22.9 percent of all births in the United States occurred by CD.[2] This rate is the highest total CD rate reported since data collection began in 1989.

The VBAC rate, defined as the proportion of women who delivered who have prior CD, steadily increased from 1989 to 1996, but it has been decreasing each year thereafter (Table 1). After 1996, rates of VBAC decreased within each reported race and ethnicity group, and decreased with increasing maternal age.[2, 7] Regional differences are evident: VBAC rates are highest in the Northeast (27.3 per 100 births to women who had a prior CD, in 1999), followed by the Midwest (26.8), the West (25.4), and the South (20.3).[8]

Table 1. Total primary cesarean rates and VBAC rates: United States, 1989-2000

Year	Total[1]	Primary[2]	VBAC rate[3]
2000	22.9	16.0	20.7
1999	22.0	15.5	23.4
1998	21.2	14.9	26.3
1997	20.8	14.6	27.4
1996	20.7	14.6	28.3
1995	20.8	14.7	27.5
1994	21.2	14.9	26.3
1993	21.8	15.3	24.3
1992	22.3	15.6	22.6
1991	22.6	15.9	21.3
1990[4]	22.7	16.0	19.9
1989[5]	22.8	16.1	18.9

Adapted from Menacker, 2001.[7] Trends in Cesarean Birth and Vaginal Birth After Previous Cesarean, 1991-1999. National Vital Statistics Report, V49, #13, p2.

[1]Percent of all live births by CD.

[2]Number of primary cesarean per 100 live births to women who have not had a prior CD.

[3]Number of VBAC deliveries per 100 live births to women with a prior CD.

[4]Excludes data for Oklahoma, which did not report method of delivery on the birth certificate. The reporting area comprised 99 percent of births in 1999.

[5]Excludes data for Louisiana, Maryland, Nebraska, Nevada, and Oklahoma, which did not report method of delivery on the birth certificate. The reporting area comprised 94 percent of births in 1989.

As allowing TOL became more common, practice variation became a larger concern, e.g., expanding criteria for eligibility and medical induction, and for augmentation of labor. In parallel

with this liberalization of criteria and management, maternal and fetal risks were perceived to be increasing. Patterns of care provision began to be explored as potential explanations for perceptions of increasing risks.

For most women who have had a prior CD, obstetric care is provided by nurse midwives, family practitioners or obstetrician-gynecologists. In 2000, physicians attended 91.6 percent of all deliveries and midwives attended 7.8 percent.[2] Ninety-nine percent of all births were delivered in a hospital.[2] As of 1994, 13 percent of all deliveries attended by a physician were performed by family practice and general practice physicians, and 85 percent were performed by obstetrician-gynecologists.[9] Among obstetrician-gynecologists, 18 percent of all deliveries were by cesarean.[10] According to 2001 survey data from the American Academy of Family Physicians, 29.8 percent of family physicians perform obstetrics.[11] Of family physicians who do perform cesareans, 4.7 percent perform them within a hospital practice and 2.5 percent perform them only with consultation. Sixty-seven percent report that they would not desire to perform them; however, 3.9 percent report that they do not perform cesareans because the liability is prohibitive or because of fear of a liability suit.[11] Though 22.5 percent of both urban and rural family physicians report performing routine deliveries, differences by geographic location are evident. Of rural family physicians, 5.7 percent report performing cesareans, and 18.6 percent report caring for patients undergoing VBAC; the comparable figures for urban family physicians are 4.9 percent and 15.5 percent, respectively.