



How will we know it when we've got the right cesarean rate?

📌 Do we perform too many C-sections? Or too few? And does the rest of the world have the answer for us?

READER CHALLENGE

Here's a quiz: Which country of these six had the lowest rate of cesarean delivery in 2000—the most recent year reported by the WHO?

A. Cuba B. China C. The United States D. Portugal E. Italy F. Brazil

Maybe you're like most clinicians—surprised to learn that the answer is “c.” The United States had the lowest rate of cesarean delivery among these selected countries, based on a recent World Health Organization (WHO) report.¹

The wide variation in the cesarean delivery rate from country to country, worldwide (TABLE), suggests that cultural and medical factors play a dominant role in determining that rate. But what constitutes an “appropriate” cesarean delivery rate in a large population of women? The answer to that question is controversial.

Some authorities believe that the cesarean delivery rate should be in the range of 20%, or less; for example, the US Department of Health and Human Services, in its Healthy People 2010 initiative, set a goal of a 15% cesarean

delivery rate for low-risk women. In contrast, other authorities believe that it is a woman's right to elect cesarean delivery.² If elective cesarean delivery increases in frequency, as it has in such countries as China³ and Brazil, it would likely result in a further increase in the rate of cesarean delivery in the United States.

Why is the rate so low in some places?

Many countries reported a rate of cesarean delivery of less than 5% in 2000 (TABLE). In most of those countries, qualified surgical obstetricians and anesthesiologists are in limited supply. Those countries also tend to have few state-of-the-art operating rooms and limited access (or no access at all) to blood banking services. Furthermore, some of the countries with a low cesarean delivery rate also have increased rates of maternal and perinatal mortality.

Almost all countries that have an advanced medical system also have a cesarean delivery rate greater than 5%. It's reasonable to conclude, therefore, that a cesarean delivery rate of

TABLE Cambodia's low, Mexico's high: The cesarean rate in selected countries*

Country	Rate
“LOW” RATE OF CESAREAN DELIVERY	
Cambodia	1.0%
Haiti	1.7%
Nigeria	1.7%
Uganda	2.6%
Eritrea	2.7%
Uzbekistan	3.0%
Indonesia	4.1%
“MODERATE” RATE	
United Kingdom	21.4%
Canada	22.5%
Ireland	23.3%
Germany	23.7%
Switzerland	24.3%
United States	24.4%
Cuba	28.5%
Portugal	30.2%
Chile	30.7%
“HIGH” RATE	
Italy	36.0%
Brazil	36.7%
Mexico	39.1%
China	40.5%

*Based on WHO findings from 2000.¹

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**What about your hospital?
Is the C-section rate in line
with the US, overall?**

Instant Poll

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ROUTE OF FIRST DELIVERY INFLUENCES CHOICE OF ROUTE SUBSEQUENTLY

In Massachusetts in 2006, among women with a singleton pregnancy who had never delivered previously, approximately 70% delivered vaginally and 30% delivered by C-section. In a second or succeeding pregnancy, among women who had a history of vaginal delivery in their previous pregnancy, the delivery route was 90% vaginal and 10% cesarean. In a second or succeeding pregnancy among women who had a history of a cesarean delivery in the previous pregnancy, delivery route was 90% cesarean and 10% vaginal.

Clearly, the route of first delivery heavily influences the route of second and all subsequent deliveries. When a first birth is by cesarean delivery, subsequent deliveries are all likely to be a C-section, and the likelihood of cesarean delivery increases with each succeeding repeat cesarean delivery.¹

Consequently, extra effort is warranted to ensure a vaginal delivery with the first birth for women who intend to have three or more children. This will maximize the likelihood of subsequent vaginal delivery. For women who intend to have only one or two children, however, it isn't as critical to take any unnecessary risks during a first labor to achieve vaginal delivery—because having only one or two cesarean deliveries is associated with less cumulative surgical risk.

1. Silver RM, Landon MB, Rouse DJ, et al; National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Maternal morbidity associated with multiple repeat cesarean deliveries. *Obstet Gynecol.* 2006;107:1226-1232.

less than 5% is too low to optimize maternal and neonatal outcomes.

...and so high in others?

A few countries, including China, Mexico, and Brazil, reported a rate of cesarean delivery in 2000 greater than 35%. In southeastern China, the cesarean delivery rate among singleton pregnancies was reported to be 60% in 2003 and 56% in 2006.³ In some regions within southeastern China, maternal-request cesarean delivery accounted for 50% of cesarean deliveries.

As is the case in many countries, patient variables associated with an

increased rate of cesarean delivery in southeastern China include:

- nulliparity
- a greater level of education
- older maternal age.

In a review of more than 800 cesarean deliveries performed at two Chinese hospitals, the authors noted that approximately 50% of cesarean deliveries were judged to have been performed for an appropriate indication.⁴ The remaining C-sections were considered inappropriate because they had not been preceded by an adequate trial of labor or lacked an appropriate surgical indication. The politico-cultural norm of the single-child family and the desire for a “perfect” baby likely contribute to the high cesarean delivery rate in China.⁵

Could countries where the cesarean delivery rate is greater than

35% safely decrease that rate? Probably, by a multipronged effort that:

- highlights the risks of cesarean delivery⁶ and encourages vaginal birth
- reduces the use of elective cesarean delivery
- reduces the use of elective inductions before 41 weeks' gestation
- encourages a trial of labor after C-section.

Experience in the United States from 1986 to 1996, when the rate of cesarean delivery decreased, suggests that concerted action can reduce the rate of cesarean delivery.

Is there an “appropriate” cesarean delivery rate?

What is it?

Experts haven't reached consensus on the most appropriate rate of cesarean delivery—neither in the United States nor worldwide. In 2000, the cesarean delivery rate in the United States was about 24%; in 2006, about 31%—a rate that many authorities believe is too high. As I noted, the goal of Healthy People 2010 is a cesarean delivery rate of 15% among low-risk women.

There is an alternative view: that the rate of cesarean delivery in the United States is reasonable because it is similar to what is reported from other industrialized nations, including Ireland, the United Kingdom, and Germany. Practice patterns in those countries are likely the cumulative result of appropriate clinical decisions made by practitioners and patients and their families, within the cultural and medical context of a developed country.

Maybe we're just where we want to be with the C-section rate

Based on the WHO report cited here, clinicians in the United States can be assured that this country has neither

Have a comment to share?

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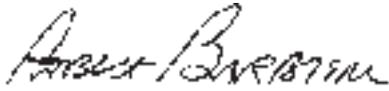
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Editorial

the lowest nor the highest rate of cesarean delivery in the world. So it's reasonable to conclude that, given today's medical and cultural environment, the US rate of cesarean delivery rate may not be too low and may not be too high. It may be just about right. ☺



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3. Zhang J, Liu Y, Meikle S, Zheng J, Sun W, Li Z. Cesarean delivery on maternal request in southeast China. *Obstet Gynecol.* 2008;111:1077-1082.
4. Guo HY, Xu LZ, Zhou YM. An analysis of factors affecting doctor's decision on the selection of cesarean section delivery. *Pract Obstet Gynecol J.* 2000;16:32-34. Cited in Reference 3.
5. Feng L, Yue Y. Analysis of the 45-year cesarean rate and its social factors. *Med Soc.* 2002;15:14-16. Cited in Reference 3.
6. Villar J, Valladares E, Wojdyla D, et al; 2005 WHO global survey on maternal and perinatal health research group. Cesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. *Lancet.* 2006;367:1819-1829.

Instant Poll



Report to us on the C-section rate at your hospital!

At my hospital, the overall cesarean delivery rate is

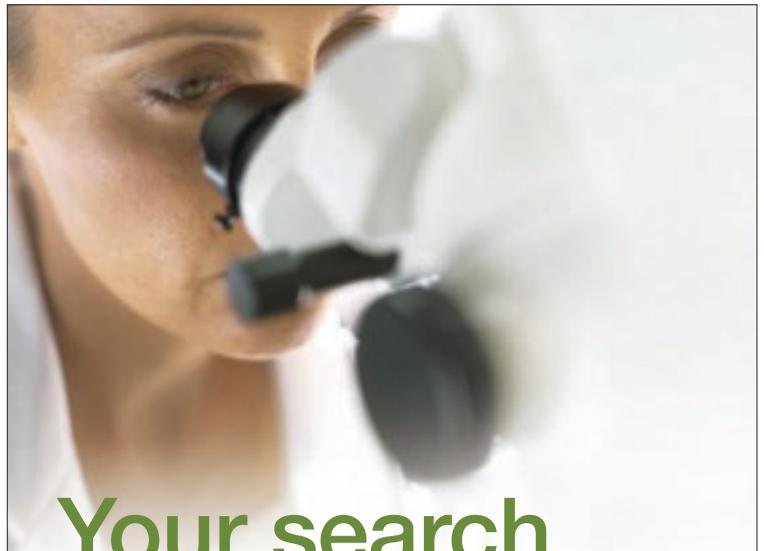
- | | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> <25% | <input type="checkbox"/> 35% to 40% |
| <input type="checkbox"/> 25% to 30% | <input type="checkbox"/> 40% to 50% |
| <input type="checkbox"/> 30% to 35% | <input type="checkbox"/> >50% |

...and I think that this rate is

- | | |
|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> too low | <input type="checkbox"/> about right |
| <input type="checkbox"/> too high | |

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