

## Reducing Cesarean Delivery Rates in Managed Care Organizations

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**Background:** A national consensus has emerged that cesarean delivery (CD) rates are excessive.

**Objectives:** To review the subject of CD delivery and to discuss options for reducing CD delivery rates in managed care organizations (MCOs) from the current rate of approximately 22% to a rate of 10% to 15% in 5 years, as proposed by the World Health Organization.

**Study Design and Methods:** Literature review.

**Results:** Contracted physicians could be provided with evidence-based clinical practice guidelines for CD as well as data on acuity-adjusted physician-specific CD rates within the MCO and could be offered supplementary fees for performing vaginal deliveries after a previous CD. Administrators and physician leaders of contracted hospitals could also be asked to adopt written criteria for lack of progress in labor, to review all indications for CD for all cases, to encourage use of vaginal delivery after a previous CD, and to require a second opinion for performing all except emergency CDs. Members of MCOs who become pregnant could be mailed an educational pamphlet that encourages vaginal delivery rather than CD.

**Conclusions:** To facilitate dissemination of information, MCOs should report their experience in implementing, monitoring, and evaluating the effectiveness and outcomes of programs to reduce CD delivery rates. The MCO objective would be to lower CD rates without alienating physicians or attempting to impose a regimented approach that would offend and be counterproductive for consumers.

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Cesarean delivery (CD) rates in the United States increased from 5.5% in 1970 to 16.5% in 1980 and 23.0% in 1995, with the southern states having the highest rates.<sup>1</sup> These higher rates primarily reflect an increase in the number of uncomplicated, full-term singleton births delivered by CD.<sup>2</sup> By contrast, CD rates in the Netherlands and Japan are as low as 6% to 7%, and in other developed countries rates range from 10% to 15%. Canada and the United Kingdom are exceptions, with rates of 20%. After the late 1980s, CD rates in the United States began to decline, whereas rates for vaginal

births after a previous CD (VBAC) rose sharply.<sup>3</sup> These trends are now starting to reverse, with the VBAC rate having decreased from 17% in 1996 to 11% in 1999.<sup>2</sup>

Cesarean section, a time-honored method of shortening labor when either mother or child is in danger, is the most frequently performed surgical procedure in the United States. Despite the nearly 5-fold increase in CD rates since the 1960s, maternal and child health have not improved in parallel.<sup>4</sup> No significant improvement has occurred in rates of cerebral palsy, low birth weight, maternal mortality, or perinatal mortality.<sup>5</sup> In fact, CD is more likely to result in significant morbidity compared with vaginal delivery, with maternal mortality rates 2 to 26 times higher than those associated with vaginal delivery.<sup>6-8</sup>

According to Francome and Savage,<sup>8</sup> the desirable CD rate is approximately 6%. Myers and Gleicher<sup>9</sup> suggest that a rate of 5.5% could be expected to improve perinatal outcomes in selected high-risk situations. On the other hand, there is currently a movement in medical circles to promote the right of women to choose CD.<sup>10</sup> Some are fighting the effort to reduce CD rates by questioning the recommended level, suggesting that lowering it may be dangerous, or even suggesting that this is what women want.<sup>11-13</sup>

Justifications for women to choose a CD often begin with the assertion that CD is safer today than ever before. In fact, there is a spectrum of risk, ranging from emergencies to a woman's choice without medical indications. The "safety" of CD depends partly on the point of view of the individual affected.

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Documented risks to mother and baby are not widely presented, perhaps because if a CD is done, the risks are borne by baby and mother, whereas if a CD is not done, the physician takes the risk.<sup>10</sup>

### Risks of Cesarean Delivery

For the woman, vaginal delivery is generally preferable to CD, even for former CD patients:

- The maternal mortality rate after CD is very low but is higher than that for vaginal delivery by a factor of 2 to 11.<sup>14</sup> Elective CD with no emergency has a 2.8-fold greater risk of maternal mortality according to data from the United Kingdom on more than 150,000 elective procedures.<sup>15</sup>
- Because CD involves major abdominal surgery, it carries risks of problems related to anesthesia, damage to blood vessels, extension of the uterine incision, and damage to the urinary bladder or other organs. A large retrospective cohort study<sup>16</sup> of 33,251 women in Tennessee's Medicaid program showed that 2.6% of women with vaginal deliveries vs 8.9% of women with CD had at least 1 childbirth-related medical condition requiring prolonged hospitalization or readmission.
- Delivery by CD in the United States is associated with an 80% increased risk of rehospitalization for complications such as uterine infection, obstetrical surgical wound problems, and cardiopulmonary and/or thromboembolic conditions.<sup>17</sup>
- Scarring of the uterus can lead to decreased fertility, miscarriage, ectopic pregnancy, placenta abruption, and placenta previa.<sup>18,19</sup>

Risks for the baby, when the CD is not an emergency and the baby is not in difficulty, include the following:

- A 1.9% chance that the surgeon's knife will lacerate the fetus (a 6% chance with a nonvortex position); such lacerations are often missed, as only 1 of 17 fetal lacerations was recorded by the obstetrician in one study.<sup>20</sup>
- Respiratory distress syndrome in preterm infants and other forms of respiratory distress in mature term infants.<sup>10,21,22</sup> Infants delivered by elective CD vs trial of labor have a more than 2-fold increased risk of developing respiratory problems.<sup>23</sup>
- Iatrogenic prematurity, ie, resulting from surgically removing the baby before term, with resultant respiratory morbidity.<sup>24</sup>
- A substantially increased need for and degree of resuscitation, a greater incidence of a 1-minute Apgar score less than 4, and an increased need for respiratory and ventilator support.<sup>25</sup>

### Benefits of Vaginal Delivery

In vaginal deliveries, on the other hand, (1) the infant secretes lung fluid during delivery, thereby reducing the risk of respiratory problems; (2) the mother loses less blood and is less likely to experience postpartum complications such as urinary tract and wound infections; (3) the mother recovers within approximately 2 weeks vs 6 weeks after a CD; and (4) hospital stays, eg, for VBACs, are shorter, and there are fewer postpartum transfusions and a decreased incidence of postpartum maternal fever.<sup>26</sup>

Delivery by CD entails higher hospital bills and hospital stays averaging 4.2 days, about double the length of stay for vaginal births.<sup>27-29</sup> A survey by Metropolitan Life showed that the average total charge in 1993 was \$11,000 for a CD birth vs \$6430 for a vaginal delivery. An 11% national CD rate would reduce the number of these surgical procedures (based on 1991 data) from 966,000 to approximately 440,000, with a cost savings of \$3.26 billion.<sup>30</sup>

### Benefits of Elective Cesarean Delivery

Although emergency CD can be lifesaving for mother and baby, elective CD carries many risks but no clear benefits other than the convenience of precise scheduling. Less damage to the genitalia is claimed for CD, but much of the damage in vaginal birth in the United States today is caused by hurrying an uncomplicated second stage, unnecessary use of forceps or vacuum extraction, and unnecessary episiotomy.<sup>18</sup> Often, the choice of elective CD for a woman is based on fear and lack of confidence.<sup>11</sup> For the physician, on the other hand, the benefits of CD are clear:

- Negligence claims owing to bad birth outcomes can be avoided, according to 82% of physicians in a recent survey.<sup>31</sup>
- Elective CD is convenient because it allows the practitioner to work during weekdays and daylight hours.
- Elective CD is quick—approximately 20 minutes—whereas a vaginal birth may involve a physician being on the scene or on call for 12 hours or longer.
- Higher fees can be earned from a CD for both physicians and hospitals than from a vaginal delivery.<sup>32</sup>

### The Right to Choose

The principle of informed choice is currently gaining acceptance, but a truly informed choice depends

on full and unbiased disclosure of information, which in practice seldom occurs, in part because many physicians are unfamiliar with the methods of critical literature review and prefer to consult a colleague.<sup>33</sup> Many women are therefore unaware of the true risks of elective CD and harbor false beliefs about it, eg, that it is relatively pain free. In fact, by choosing CD a woman exchanges 12 hours of labor pain for severe postoperative pain and debility and a longer recovery period with weeks or even months of pain. If a woman asks for a CD for which there is no medical indication, the physician has the right, and perhaps the duty, to refuse. Overuse of elective CD also threatens the wider community in terms of inefficient resource utilization because it requires a surgeon, possibly a second physician to assist, an anesthetist, nurses, equipment, an operating theater, blood ready for transfusion, and a longer postoperative hospital stay. Performing CD for nonmedical reasons is ethically unjustified.<sup>34</sup>

#### Baseline Risks and Needs for Cesarean Delivery

“Medical need” as a justification for emergency CD delivery has a low probability of occurrence. Based on 11,819 births at a Canadian teaching hospital, the probability of an emergency CD for fetal distress, cord prolapse, or antepartum hemorrhage was 2.7%, and the rate of uterine rupture (excluding asymptomatic dehiscence) in women with a previous low-segment transverse CD—for those with singleton vertex presentation who underwent a trial of labor—averaged 0.22%.

The estimated maternal morbidity rate was 22.9% in the elective CD group vs 18.25% in a trial of labor group, which included those having CDs who were in labor. Negligible perinatal morbidity occurred.<sup>35</sup>

Overall, the US Public Health Service<sup>4</sup> goal of reducing the rates of primary CD to 12%, repeated CDs to 65%, and all CD deliveries to 15% by the year 2000 was not achieved. According to Myers and Gleicher,<sup>9</sup> the assumption developed that clinical outcomes would continue to improve if more and more indications for CD were added. By the late 1970s, CD rates of 20% were considered acceptable. The attitude developed that one could never be wrong in performing a CD, and the legal community assumed that high CD delivery rates implied a new standard of care. One result of this philosophy—viewing CD as the solution to virtually every obstetric problem—is that few physicians receive appropriate training in vaginal breech delivery and operative vaginal delivery. A vicious circle has been created that inhibits attempts to reduce CD rates.

#### Indications for Cesarean Deliveries<sup>9</sup>

*Previous CD.* Until recently, it was considered too risky for a woman who had a previous CD to try vaginal birth, primarily owing to the increased risk of uterine rupture (48% of the increase in CD rates from 1980 to 1985 was due to repeated CDs). Although uncommon, uterine rupture can result in hysterectomy, urologic injury, maternal death, and perinatal complications, including death.<sup>36</sup> However, CDs are currently performed with a transverse incision so low in the uterus that the risk of later rupture is much reduced. The American College of Obstetricians and Gynecologists<sup>37</sup> guidelines on repeated CD deliveries and VBACs note that a trial of labor is successful in 50% to 80% of patients with low transverse uterine incisions from previous deliveries. National and international guidelines support the concept of VBAC and suggest a trial of labor in women with a previous CD, a history of transverse uterine scar (with an uncomplicated healing process), and no other complicating factors. A trial of labor is recommended (1) regardless of how many CDs have been performed, (2) if a breech presentation is present (assuming vaginal breech delivery criteria are met) with multiple gestations, and (3) if macrosomia of the fetus is suspected.<sup>9</sup> In one study, though, less than half of all eligible women underwent a trial of labor, and few medical charts noted a discussion of VBAC.<sup>38</sup> During the late 1980s and early 1990s, primary and secondary CD rates declined in the United States. In Ohio, for instance, 45% of repeated CDs in 1989 and 30% in 1996 were performed in the absence of any documented indications or on an elective basis. These declines coincided with increased electronic fetal monitoring and induction and stimulation of labor, suggesting that many repeated CD deliveries are unnecessary.<sup>39</sup>

*Previous Myomectomy.* A previous myomectomy was once considered an indication for CD, but evidence to support such a practice pattern is lacking.

*Dystocia/Cephalopelvic Dysproportion.* No more than 2% of deliveries should undergo a CD for dystocia.<sup>40</sup>

*Breech Presentation.* In the absence of evidence for the benefits of CD for this indication, vaginal breech delivery was recommended for term frank breech delivery, for nonfrank breech presentation and premature fetuses, and for breech presentation in multiple gestations. However, a recent randomized multicenter trial has shown that planned CD is significantly better

for the term fetus in the breech presentation than planned vaginal delivery with respect to perinatal mortality, neonatal mortality, and serious neonatal morbidity. There were no differences between groups in terms of maternal mortality or serious morbidity.<sup>41</sup> However, these findings may not be generalizable to all term breech fetuses, and a policy of planned CD for all breeches would be inappropriate. A safe vaginal delivery of term and preterm breech fetuses can be accomplished in up to two thirds of cases.<sup>42</sup>

**Preterm Delivery.** Cesarean delivery is not associated with a lower risk of either mortality or intraventricular hemorrhage in very low-birth-weight infants, independent of presentation. Prematurity per se is therefore not an indication for CD.

**Fetal Distress.** Cesarean section for fetal distress should occur in no more than 0.6% to 1.5% of all deliveries.<sup>9</sup>

**Advanced Maternal Age.** There is no evidence that older women have less tolerance for prolonged labor than younger women.

**Genital Herpes.** Performing a CD in women with repeated outbreaks of herpes simplex virus type 2 infections results in more than 1580 excess CDs for every poor neonatal outcome prevented, at a cost of \$2.5 million for every case of prevented neonatal herpes and \$203,000 per quality-adjusted life-year gained. Neonatal infection in recurrent herpes infection as a result of protective antibodies is rare (1% compared with primary disease).<sup>9</sup>

**Physician Factors.** Older, more experienced physicians perform fewer CDs for dystocia and a higher percentage of forceps deliveries and breech extractions. Even midforceps deliveries are safe and acceptable alternatives to CDs if patients are properly selected and surgeons are experienced.<sup>9</sup>

**Stress.** The stress of labor is a contributing factor in CD. The presence of a supportive companion or coach ("doula") during labor significantly reduces the likelihood of a CD.<sup>43</sup> This doula effect may contribute to the lower CD rates observed in birthing center settings and with midwife deliveries.<sup>44</sup> Women supported by doulas or midwives have significantly shorter labor and rates of epidural anesthesia, and a smaller percentage of newborns experience fetal distress or are admitted to neonatal intensive care units.<sup>45</sup>

#### **Vaginal Birth After Cesarean Deliveries**

Vaginal birth after a previous CD is generally considered a safe practice, and 75% of women attempting a VBAC are successful. However, risks to mother and baby are known to increase with induction of

labor.<sup>36</sup> A recent meta-analysis<sup>46</sup> of 11 studies involving a total of 39,000 patients reported a perinatal death rate of 5.8 per 1000 with a trial of labor after CD vs 3.4 per 1000 with elective repeated CD, a difference of 2.4 per 1000 (1:417). This study also found a 70% increase in the risk of fetal death and a lower Apgar score at 5 minutes associated with a trial of labor compared with elective repeated CD. In another study,<sup>47</sup> women attempting VBAC who were given misoprostol (a potent synthetic prostaglandin E<sub>1</sub> analogue) to induce labor had a rate of uterine rupture of 5.6% vs 0.2% among women attempting VBAC who were not given the drug. High infusion rates of oxytocin also place women at increased risk.<sup>48</sup>

The risks of uterine rupture associated with different methods of delivery were examined in a retrospective cohort study<sup>49</sup> of 20,095 primiparous women who had given birth to live singleton infants by CD in hospitals in Washington State (1987-1996) and who delivered a second singleton child during the same period. Findings on uterine rupture were based on hospital discharge data using selected *International Classification of Diseases, Ninth Revision, Clinical Modification* codes. Rates were 1.6 per 1000 among women with repeated CD without labor, 5.2 per 1000 among those with spontaneous onset of labor (relative risk, 3.3), 7.7 per 1000 among those *without* prostaglandin-induced labor (relative risk, 4.9), and 24.5 per 1000 among women *with* prostaglandin-induced labor (relative risk, 15.6). The overall risk of uterine rupture was 4.5 per 1000, consistent with previous findings.<sup>50</sup> The infant death rate was 10 times higher among the 91 women who had uterine rupture vs the 20,004 who did not (5.5% vs 0.5%), indicating that these ruptures were clinically important. Women attempting a VBAC should be informed of these increased risks for themselves and their infants.<sup>51</sup> This information may encourage greater compliance with awaiting spontaneous labor and might lead to higher VBAC rates. Obstetricians should also avoid the use of drugs to induce labor in women who have had a previous CD and should perform another CD if induction is indicated.

The study has been faulted, however, on grounds that uterine rupture cannot be assessed on the basis of hospital discharge data alone because *International Classification of Diseases, Ninth Revision, Clinical Modification* codes lack the required specificity and consistency;<sup>52</sup> medical records also need to be reviewed to confirm the occurrence of ruptures. In addition, the study seems to overemphasize poten-



tial hazards of VBAC by focusing on the quantitatively high relative risks of uterine rupture per se (regardless of delivery method) rather than comparing the overall risks of attempted VBAC vs repeated elective CD, the latter of which are considerably lower in absolute terms. Based on the data of Lydon-Rochelle et al,<sup>49</sup> the likelihood of infant death with attempted VBAC was 1.1 per 1000 (14/13,115 or 1:936) compared with 0.29 per 1000 (2/6980 or 1:3490). Given the known risks to mother and fetus associated with CD, it would be inappropriate to discourage attempted VBAC altogether on the basis of these low absolute risks. VBACs should, however, be closely monitored and induction of labor should be avoided if possible.

### Why Are CD Rates so High?

If VBACs are to be increased, overall CD rates should decrease or stabilize, since most CDs are repeated procedures.<sup>53,54</sup> Nearly half (48%) of the increase during the 1980s was associated with previous CD; a further 29% was associated with dystocia, 16% with fetal distress, 5% with breech presentation, and 2% with all other complications. More than 90% of women delivering by CD at that time were continuing to have additional CDs. In 1985, the primary CD rate in the United States for teenagers and women reached 14% to 16%. Thus, efforts to reduce the overall CD rate should focus on increasing VBACs.<sup>54</sup> The most common medical reasons for primary CD are failure to progress and fetal distress.<sup>55</sup> However, the definitions of these complications may have been interpreted more liberally over the years so that less severe forms now result in CD than would have done in the past.<sup>53</sup>

With malpractice insurance rates of more than \$100,000 per physician annually in the United States, it is not surprising that litigation concerns have contributed to the rise in CD rates.<sup>2</sup> A recent survey showed that 82% of physicians performed CDs to avoid negligence claims.<sup>31</sup> However, in Canada, where litigation is not as widespread as in the United States, rates are close to those of the United States, and well above those of most European countries.<sup>56</sup> A possible explanation for the higher overall rates in the United States and Canada is that deliveries are mostly supervised by physicians, whereas countries in which midwife deliveries predominate generally have lower CD rates.<sup>57</sup> This may reflect the fact that midwifery is based on a different paradigm than is medicine. Midwifery focuses on the normality of pregnancy and views a breech delivery as a variation of the

normal, whereas physicians tend to focus on the potential for abnormality and view breech delivery as a pathological condition.<sup>58</sup>

Cesarean delivery rates are uniformly higher in older women, in proprietary hospitals, in smaller hospitals, among patients with private insurance, and for private services. These variations cannot be explained on the basis of medical necessity because institutions with a disproportionate number of high-risk patients, so-called perinatal centers, usually have lower CD rates than do providers of lower levels of care.<sup>9</sup> Because high rates have been observed in private patients, in private hospitals, and in other settings where item-of-service payments are involved, method of payment and higher revenues brought by CDs may be important.<sup>59</sup>

Two thirds of CDs are performed as either repeated CDs or because of a diagnosis of dystocia/cephalopelvic disproportion. Any attempt to reduce CD rates, therefore, has to contend with these indications. The literature suggests that, at most, only one third of previous CDs require a repeated CD if patients are allowed a proper trial of labor.<sup>9,60</sup> The CD indication of dystocia can be limited to no more than 2% of all deliveries.<sup>61</sup> At present, slightly fewer than 9% of pregnant women undergo CD with a primary diagnosis of dystocia/cephalopelvic disproportion, more than 4 times the recommended rate.<sup>1</sup> A safe vaginal delivery of breech presentations can be accomplished in up to two thirds of cases.<sup>42</sup> The fact that CDs for fetal distress represent only 9% of all CD indications suggests that medicolegal considerations have only marginal effects on national rates.

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### OPTIONS FOR REDUCING CD RATES

Potential options for reducing CD delivery rates in an MCO may be organized in terms of approaches aimed at the major participants in the delivery process, namely, physicians, hospitals, and members.

#### Physician-Based Options

*Query Management Facility Reports.* Reports can be generated by MCOs on individual physicians, claims, and practice activities. This information could be given to physicians with a request to change or modify their practice, but it is doubtful that this option alone would affect habitual physician practices.

*Peer Review and Personal Performance Feedback.* Information on one's own practice and

anonymous information about that of one's peers in the same market could be given periodically to physicians, again with a request to alter behavior patterns. In contrast to merely providing data on a physician's clinical practice, this type of comparative information might create a stronger desire on the part of the physician to change. If the CD rate of peers is 50%, however, the process is unlikely to identify any individual with excessive utilization. It is important, therefore, that the peer group be compared with either a target utilization rate or an actual and presumably lower rate of a comparable group and that CD rates greater than 15% be noted as almost always excessive.<sup>9,62</sup>

*Compilation and Dissemination of Clinical Practice Guidelines.* Compliance with valid and evidence-based clinical practice guidelines (CPGs) leads to improved patient outcomes,<sup>63</sup> but achieving compliance is extremely difficult if the guidelines differ from usual practice.<sup>64,65</sup> Physicians tend to base their knowledge and practices on clinical experience—experience that may be at variance with the scientific evidence.<sup>11,57</sup> According to Brook,<sup>66</sup> 4 criteria must be met for the successful implementation of clinical guidelines:

1. Guidelines must include information about how their implementation will affect health and resources.
2. Efforts to change physicians' clinical behavior must agree with prevailing administrative and reimbursement policies, and this may require new expenditures, eg, more time spent with patients.
3. In most cases, compliance with guidelines depends on patient perceptions, resources, and abilities, eg, the ability to read instructions, to purchase and take drugs, to change their diet, or to exercise more.
4. Clinically valid guidelines graded according to level of evidentiary support need to be developed that can be implemented via a healthcare system that supports compliance.

With regard to CD, the guidelines for breech delivery, dystocia/cephalopelvic disproportion, or even fetal distress are still unclear.<sup>67</sup> A study of 26 hospitals in New Hampshire<sup>68</sup> found that most hospitals surveyed did not have written criteria for defining lack of progress in labor. Common sense suggests that CPGs would be useful in guiding clinical practice, since review of any CD case is highly subject to the physician's subjective assessment of appropriateness rather than being based on

clinically validated and uniform tools of evaluation.<sup>69</sup> The assumption, however, that clinicians will adopt CPGs as care "directives" is optimistic at best:

- There are few standards for most patients. Because a high proportion of cases do not fit the guidelines, the latter rarely gain consensus among practitioners. On the one hand, if there is either no consensus regarding appropriate case management, or if practitioners follow widely divergent practice patterns, implementing CPGs will be difficult. On the other hand, if there is a clear consensus on an appropriate standard of care, CPGs are unnecessary.
- Until recently, CPGs were not necessarily based on data or proven best practices but on consensus panels of what clinicians think *ought* to be done or on fragmented findings from the literature. Recognizing the inherent limitations of consensus-based CPGs, Myers and Gleicher<sup>9</sup> support their use not as a front-end tool to regulate or mandate practice patterns but as a back-end, analytical tool to track physician practice patterns and to determine how well physicians conform to target rates.
- The use of CPGs by nonphysician managers is viewed as antagonistic by physicians, and external audit is understandably unpopular among physicians.

If CPGs are developed and then used to try to show that a given physician failed to follow the guidelines on a particular case, these monitoring efforts are likely to prove fruitless because the physician will not agree with the auditor. A physician's failure to follow guidelines can be discovered more easily and less confrontationally by establishing detailed practice profiles for each peer individually. This is the retrospective, analytical approach. Broad CPGs have a useful role to play in quality management, but the complexity of clinical practice suggests that they are best used to evaluate patterns of care retrospectively rather than prospectively, or in the immediate aftermath of a delivery as a case management tool.<sup>9</sup>

*Eliminate Incentives for Performing CDs.* The US Public Health Service<sup>4</sup> recommends eliminating incentives for physicians (and hospitals) to perform CDs by equalizing reimbursement for vaginal and CDs.

*Provide Incentives for Performing VBACs.* US HealthCare (Blue Bell, PA) was one of the first MCOs to use financial incentives to improve the quality of healthcare.<sup>70</sup> Twice a year since 1988, US HealthCare provides data to its primary care

physicians showing how they perform against both best practices parameters and their peers. These “report cards” consider 3 basic criteria: efficiency, effectiveness, and patient satisfaction. The company’s strategy is to share this information with physicians, document resulting improvements, and provide cash bonuses to maintain the desired behavior. Members have instant access to the report cards by dialing a toll-free telephone number. US HealthCare distributed \$2.2 million in bonuses to physicians who ranked in the top 25th percentile in terms of the criteria. Funds for the bonuses came from savings derived from reduced CD rates, which resulted in fewer costly hospital stays. On balance, it would seem that offering a financial incentive for performing VBACs would help to decrease the CD rate, particularly if the amount represented a genuine financial reward for the physician.

**Capitation.** Instead of paying fees for particular services, physicians can also be reimbursed on a per-member basis. Baseline capitation may be the best incentive for physicians to achieve set goals, the second strongest being contractual.<sup>70</sup> One type of capitation arrangement is the Extended Medical Service contract, in which an MCO contracts with physician-hospital organizations. The MCO contracts with physicians affiliated with particular hospitals and with the hospitals themselves on a per-member, per-month basis. The physicians form a group and appoint an administrator, and the administrator signs the contract on behalf of the group. Data can be collected on the costs of CD, referral patterns, and quality indicators on providers, and requests for proposals can be solicited. Physicians are then selected by team. Capitation works only if there are many obstetricians/gynecologists from which to choose. Otherwise, there is no incentive for physicians to agree to be paid on a capitation basis.

The subject of delivery (and CD in particular) is a sensitive one for all concerned. Not only are healthcare practices resistant to change, but choice of obstetrician is very important to women, and women’s complaints (eg, regarding a Pap smear) can easily have an adverse effect on an MCO. Some members will resist changing their obstetrician as a result of capitation and may leave the health plan.

**Physician Advisory Councils.** Another physician-based method is to establish a physician advisory council within each market or major area. For example, multispecialty physician advisory

councils and physicians can be chosen that are friendly toward MCOs, are cost effective, and practice high-quality medicine. Participants could be paid for their attendance, and meetings could be held monthly. These discussions would provide peer review and a range of interventions for physicians who are “outliers.” In general, “opinion leaders,” that is, peers who are held in especially high regard, are important in implementing CD guidelines.<sup>71</sup>

**Use of Midwifery and/or Family Practitioners.** Physicians dominate the practice of obstetrics in the United States, but this is not the case in many other countries. Francome and Savage<sup>8</sup> suggest that primary maternal care could also be provided by trained midwives and family practitioners.

### Hospital-Based Options

**Peer Review and Personal Performance Feedback.** A highly successful program aimed at reducing CDs was initiated at Mount Sinai Hospital, Chicago, IL, in the mid-1980s.<sup>62</sup> Participation by attending physicians was voluntary. The program included a strict requirement for a second opinion, objective criteria for the 4 most common indications for CD, and a detailed review of all CDs and of individual physician rates of performing them. Women who had previously had a CD were also urged to attempt vaginal delivery. A target total CD rate of 11% was set, and a strict peer review program was initiated in which physicians were given feedback about their CD rates compared with other physicians and then were asked to justify their rates if they were “outliers.” In 3 years, CD rates decreased from 17.5% of total deliveries to 11.5%. This decrease occurred at a time when national rates were rising. From 85% to 90% of all patients received a trial of labor, and nearly 80% patients with previous CD successfully delivered vaginally. It was also unnecessary to take any punitive action in the department related to CD utilization. The success of the Mount Sinai Hospital program was attributed to the following:

- Top-level authority was established for the effort.
- Support was given for collecting information and sharing it.
- Leadership was provided by the medical directors.
- A target was established for continuous improvement.
- The focus was on the main clinical indications for CD (dystocia, previous CD, and breech presentation).
- Diagnostic criteria (clinical guidelines) were developed for the major indications for CD

and were used in designing a comprehensive database.

- Information was shared periodically with physicians to help them analyze their practice patterns and neonatal outcomes compared with their peers.
- Compliance with guidelines was not measured, and individual decisions that differed from the guidelines were not reviewed. Instead, it was the sharing of information with clinicians that led to behavior change.

*Hospital Peer Review Committees.* Committees designed to monitor physician activity and to intervene when necessary to sanction individual physicians can be formed within hospitals. A potential problem with this option is that the appointed leaders may be the very physicians whose practice patterns one wants to change. The American College of Obstetricians and Gynecologists<sup>37</sup> recommends that each hospital develop its own protocol for management of patients with previous CD. These guidelines suggest that in the absence of a contraindication, women with 1 previous CD with a low transverse incision should be counseled and encouraged to attempt labor in their current pregnancy.

#### **Member-Based Options**

Because labor is thought to proceed more efficiently if the woman knows her caregivers and has labor at home, Francome and Savage<sup>8</sup> propose that expectant mothers be given training in methods of dealing with anxiety, such as having a close companion or doula present during the birthing process. The following are some additional options for reducing CDs:

- Communicate information on the risks and benefits of CD to members who become pregnant.
- Provide acuity-adjusted physician- and hospital-specific CD rates to members, eg, taking into account factors that affect CD rates, such as placenta previa and parity.
- Provide vouchers for and/or hold prenatal classes for members.

Because it is the physician in the United States who makes the decision about the form of delivery, member-based approaches would be expected to be less effective in changing CD rates than would approaches aimed at physicians. On the other hand, member-based approaches can be expected to have a “consciousness-raising” effect that, in time, could instill in women a more determined attitude about the type of delivery to be

expected and preferred. Providing members with data on CD rates among physicians and hospitals might be seen as confrontational and counterproductive in terms of relations between the MCO and physicians; it also assumes that the information will be understood and acted on, which may not be the case.

#### **Other Approaches**

- Publicly disseminate acuity-adjusted physician- and hospital-specific CD rates to increase public awareness of differences in practice.<sup>4</sup>
- Address malpractice concerns, if any.
- Publish consensus statements.

Attempts have been made to reduce CD rates by publishing consensus statements, but this strategy has had little influence on physician practices in North America. A study<sup>71</sup> in Canada showed that opinion leaders were more effective than were audit and feedback in increasing VBAC rates. As noted in the previous section, dissemination of CD rates among specific physicians and hospitals may not be understood by patients and may antagonize providers. Stafford’s<sup>72</sup> review of methods for combating rising CD rates listed 6 categories: education and peer evaluation, external review of practices, public dissemination of CD rates, changes in physician reimbursement, changes in hospital reimbursement, and medical malpractice reform.

According to Stafford, asking obstetricians and gynecologists to read the medical literature and issuing CPGs are both ineffective strategies compared with formal programs to reduce rates in individual hospitals, which have achieved reductions of up to 34%. Audit of obstetric practices by outside agencies has achieved reductions of 13% to 17%. Neither review of practices by healthcare payers before or after services nor the impact of public dissemination of CD rates on consumers on the selection of providers has been evaluated. Regarding physician reimbursement, equalizing physician payment for CD and vaginal deliveries has led to reductions of up to 50%, but evaluation and implementation have been limited. Regarding hospital reimbursement, removing the incentive for CD through prospective payment for deliveries has neither been implemented nor evaluated; the same is true of approaches aimed at reducing the volume and cost of malpractice claims by legal reform. Alternatives beyond education and peer evaluation will increasingly restrict physician independence.<sup>72</sup>



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 PROPOSED ACTION PLAN FOR MCOs

The following outline has been proposed for attempting to track and improve performance in healthcare organizations<sup>67</sup>: (1) identify a goal, (2) put together a team, (3) collect the least amount of essential data, (4) be prepared for physicians to exhibit a “fight or flight” response, (5) and assume change will take time and be patient.

A target goal could be set for total CD rates of 10% to 15% within 5 years. Specific goals proposed as part of a comprehensive plan for reducing CD rates in a health plan should be guided by the criteria of simplicity, inexpensiveness and/or cost effectiveness, ease of implementation, and a high *prima facie* probability of success. The Mount Sinai Hospital research group found that development and use of CPGs as a front-end utilization management tool was seriously limited as a sole means of quality improvement. At minimum, physicians and hospitals in the MCO need to be given CPGs that reflect contemporary evidence on indications for CDs.<sup>9,67</sup>

One of the most effective methods for reducing CD rates is peer review and feedback of information on performance, followed, if needed, by detailed retrospective analysis in consultation with the practitioner.<sup>9</sup> This method is best suited for hospital departments of obstetrics and gynecology and requires the on-site presence of a respected clinician with the necessary authority for developing and maintaining the program. A more limited information feedback program for physicians on their individual practice patterns, along with comparisons to target CD rates, could usefully be implemented by MCOs. Although member-based approaches are probably less effective than those aimed at providers, MCOs should also aim to increase vaginal deliveries by educating expectant mothers about the risks and benefits of CD vs vaginal births, encouraging them to undergo a trial of labor, and offering practical advice to reduce anxiety and promote successful vaginal delivery.<sup>72</sup>

Although high CD rates are primarily a quality of care rather than an economic issue, substantial savings would result if total CD rates were reduced to 15%. Providers would also be expected to alter their practices in response to changes in reimbursement policies aimed at reducing CD rates. A switch from fee-for-service reimbursement to capitation is unlikely to be accepted in areas with relatively few specialists in obstetrics and gynecology because the incentive to participate would be lacking.

Nevertheless, financial incentives for performing VBACs would be expected to reduce CD rates.

As noted, the success of the Mount Sinai Hospital program was due in part to the direct control and authority wielded by physician leaders in the hospital.<sup>62</sup> The MCOs, in contrast to hospitals, have less authority and control over the practices of independent physicians, whereas hospital administrators have no incentive for reducing CD rates. Reimbursement by third-party payers also favors CDs because it rewards hospitals on a fee-for-service basis for all additional services provided. A necessary part of any plan to reduce CD rates, therefore, should include visits to hospital administrators by MCO representatives in an effort to persuade them to adopt written principles for promoting VBACs.

Based on review of the literature and the general strategy outlined in the previous paragraphs, the following steps might be considered for implementation, monitoring, and evaluation by MCOs:

1. Notify physicians, hospitals, and members about the CD rate reduction plan, including the target rates to be achieved. Emphasize that this is a community issue, not a managed care issue.
2. Develop and circulate broad CPGs to contracted physicians and hospitals. Share with physicians the data underlying the MCO's proposed reduction in CD to 15% overall and the desired percentages of CD for specific complications.
3. Every 6 months, provide physicians with feedback on their obstetric practice in relation to that of their peers and the MCO's target rates. Include information depicting their own acuity-adjusted CD rates relative to those of others in the same market.
4. Provide physicians with a bonus payment per VBAC.
5. Institute a global per-delivery vs type-of-delivery reimbursement plan for hospitals in the MCO, reflecting a desired ratio of CD to vaginal deliveries of 1:5. Emphasize in all communications that rates greater than 15% are excessive and do not represent current best practice. The proposed system of hospital reimbursement would be based on the assumption of a total CD rate of 20%. Supposing that the fee for an uncomplicated vaginal delivery is \$x and that the fee for a CD is \$y, then for any 5 deliveries where 1 is a CD (20% rate), the rate of payment for the 5 deliveries would be \$(4x + y), and the fee per delivery would be \$(4x + y)/5.
6. Provide expectant mothers in the MCO with a fact sheet describing the risks and benefits of vaginal birth vs CDs, encourage them to undergo a trial of

labor, and offer suggestions to reduce anxiety and facilitate successful vaginal delivery (eg, stressing the importance of having a doula at the birthing process).

The plan assumes that establishing a per-delivery method of hospital reimbursement based on a 20% CD rate would encourage hospital administrators to be more aggressive about reducing CD rates among physicians. If that effort failed, MCOs might have to resort to contracting with only those hospitals that accepted their terms; MCOs within a region could also try collaborating with each other in support of the plan.

The impact of the plan should be continuously monitored and evaluated by creating a data management system to monitor, *inter alia*, expectant mothers and provider-patient communications; physician- and hospital-specific rates of primary, repeated, and total CDs, VBACs, adverse maternal delivery, and fetal outcomes; changes in hospital and physician reimbursement; changes instituted by hospitals designed to reduce CD rates; and overall program costs. Periodic reviews of trends in rates and/or external comparisons with other MCOs would show whether the program was achieving its objective. It must be emphasized that the MCO's overall objective would clearly be to accomplish the goal of lowering CD rates without threatening physician autonomy or attempting to impose a regimented, institutionalized approach that could be offensive and alienating to both physicians and consumers.

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