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Reconsideration of the Costs of Convenience

Quality, Operational, and Fiscal Strategies to Minimize Elective Labor Induction

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Elective induction of labor is at an all-time high in the United States despite known associated risks. It can lead to birth of an infant too early, a long labor, exposure to a high-alert medication with its potential side effects, unnecessary cesarean birth, and maternal and neonatal morbidity. There is a cascade of interventions related to elective induction such as an intravenous line, continuous electronic fetal monitoring, confinement to bed, amniotomy, pharmacologic labor stimulating agents, parental pain medications, and regional anesthesia, each with their own set of potential complications and risk of iatrogenic harm. These risks apply to all women having the procedure, however for nulliparous women before 41 weeks of gestation with an unfavorable cervix, the main risk is cesarean birth after unsuccessful labor induction with the potential for maternal and neonatal morbidity and increased healthcare costs. When cesarean occurs, subsequent births are likely to be via cesarean as well. Elective labor induction before 41 weeks is inconsistent with quality perinatal care, and performance of this unnecessary procedure should be minimized. Convenience as the reason for labor induction is contrary to a culture focused on patient safety. A review of current evidence, followed by changes in practice, is warranted to support the safest care possible during labor and birth. Various strategies to reduce the rate of elective induction in the United States are presented. **Key words:** *cervical readiness*, *convenience*, *costs of care*, *elective labor induction*, *nulliparous women*

Convenience has been defined as expediency and ease, freedom from discomfort, and anything that is intended to save resources (such as time or energy) or minimize frustration,[1,2] and is often cited as the reason for the increase in the number of elective labor inductions in the United States. Ostensibly, labor induction may appear to be convenient for patients, physicians, and institutions (see Table 1), but in many cases, the actual process and subsequent outcome are anything but convenient when considering these common definitions. It may be long, uncomfortable, exhausting, and frustrating. Clinically, elective induction can lead to birth of an infant too early, a long labor, exposure to a high-alert medication with its associated side effects, unnecessary cesarean birth, and maternal and neonatal morbidity.[3–12] There is a cascade of interventions associated with elective induction such as an intravenous line, continuous electronic fetal monitoring, confinement to bed, amniotomy, pharmacologic labor stimulating agents, parental pain medications, and regional anesthesia, each with their own set of potential complications and risk of iatrogenic harm.[13] These risks apply to all women having the procedure, however

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Table 1. Commonly cited convenience issues for patients, physicians, and institutions

Patients
Timing of birth to coincide with personal schedules, availability of partners, support persons and family, babysitting issues
Desire for preferred physician to attend the birth rather than a physician partner in the group practice
Wish to "get the pregnancy over with"
Relief from pregnancy discomforts
Avoidance of certain dates such as holidays, preference for certain dates with personal meaning
Income tax deduction enhancement
Physicians
Quality-of-life issues (labor and birth occurs during a weekday, during the day shift, while on call; avoidance of interruptions of office hours, weekends, and evenings; ability to schedule more than 1 patient on the same day)
Patient satisfaction
Liability concerns
Desire to attend birth of primary patient for reimbursement issues or per patient request
Institutions
Ability to plan for scheduling and staffing
Patient satisfaction
Provider satisfaction
Market share issues

for nulliparous women with an unfavorable cervix, the main risk is cesarean birth after unsuccessful labor induction.[3,5,6,8,9,11,12,14] Cesarean birth after labor induction is known to be associated with higher healthcare costs due to increased interventions, more intensive monitoring, a longer intrapartum and postpartum length of stay (LOS) and risk of maternal and neonatal morbidity than spontaneous labor.[15–20] If the woman has another pregnancy, there are further associated risks of placental abnormalities such as placenta previa and placental abruption for that pregnancy and subsequent pregnancies.[18,19]

Routine elective labor induction for nulliparous women is inconsistent with quality perinatal care and performance of this unnecessary procedure should be minimized.[8] Convenience as the reason for labor induction is contrary to a culture focused on patient safety.[21] There is likely no other area of medicine in which potentially dangerous medications are given to hasten completion of a physiologic process that would, if left on its own, usually be accomplished without incurring the risk of drug administration.[21] Given the lack of outcomes-based evidence demonstrating clinical benefit of elective induction before 41 weeks of gestation,[22] together with the cascade of potential increased risks incurred, the use of a high-alert medication "bearing a heightened risk of harm"[4,10] is difficult to justify under these elective circumstances.[21] The use of prostaglandin agents to assist in this elective process adds additional risks and also is unjustified.[21]

In contrast, elective induction at 41 weeks and beyond may be beneficial when compared to expectant management or allowing the pregnancy to continue. A recent systematic review suggests elective induction in this context may actually reduce the risk of cesarean birth.[22] Rigorous evidence in the form of large, prospective, randomized controlled trials comparing maternal and neonatal outcomes of elective induction with expectant management for nulliparous women between 39 and 41 weeks of gestation in the United States is greatly needed.[22] The preponderance of current evidence is from retrospective cohort studies and prospective quality improvement projects that did not include randomization or compare elective induction with expectant management; rather elective induction was compared to spontaneous labor. Nevertheless, these studies, which form the basis of what is currently known about risks of elective labor induction, had large samples and have consistently shown that elective induction of nulliparous women with an unfavorable cervix increased risk of cesarean birth and other maternal and neonatal morbidities when compared with spontaneous labor.[3,8,11–12,40]

It should be emphasized that most clinicians want to provide optimal care. The normalization of non–evidence-based care related to labor induction has occurred over time and in response to multiple competing time and quality-of-life pressures. Requests from patients to schedule elective births for their convenience should not be dismissed as a contributing factor, although this variable is not well documented in the literature. This article offers suggestions for developing strategies to decrease the rate of elective labor induction in the United States. The main focus is on elective inductions of nulliparous women before 41 weeks of gestation with unfavorable cervical status because a practice change would be most beneficial to this patient population. Notwithstanding the clinical, operational, and quality implications of elective induction, there are significant economic issues involved. These economic issues have received little attention to date; however, given the limited resources available to pay for healthcare costs now and in the future, and the renewed interest in healthcare reform, costs of care related to elective labor induction bear closer scrutiny. Strategies to reduce elective inductions should include a fiscal component.

RECENT NATALITY DATA

In 2008, there were 4 247 000 live births in the United States.[23] According to the most recent data available, the rate of labor induction in the United States more than doubled since 1990 from 9.5% to 22.5% in 2006,[24] although it is likely that these data are significantly underreported. The rate of elective induction as a subset of the overall induction rate is unable to be abstracted from certificates of live births. Furthermore, the induction rate is calculated on the basis of all women who give birth.[24] If women who had a planned cesarean birth are excluded from the denominator and data calculated on the basis of all others who potentially could have had labor induction, the reported rate would be considerably higher.[25] Induction rates based on birth certificate data consistently do not match hospital discharge data.[26] It has been estimated that between one-half and two-thirds of labor inductions are for nonmedical indications[27,28]; however, the distinction between elective and medically indicated induction varies widely by institution (community or academic), area of the country (region, state, rural, or urban setting), and individual care providers.[29] Even though the exact percentage of inductions that are elective is unknown, the overall rate of induction is rising faster than the rate of pregnancy complications that would require a medically indicated induction.[22,24]

COSTS OF CARE

Childbirth is the most common reason for hospital admission. Approximately 1 in 4 hospital discharges in the United States is a childbearing woman or newborn and 6 of the 15 most common hospital procedures in the United States involve childbirth, with cesarean birth the most frequent surgical procedure.[30] Hospital charges ($860 billion in 2006) for mothers and newborns far exceed hospital charges for any other condition, with private insurers paying for 49% of births and Medicaid paying for 43%.[30]

The costs of cesarean birth after failed induction are nearly double that of spontaneous vaginal birth,[31] primarily because of longer intrapartum and postpartum LOS. At our hospital with more than 8000 births annually, according to the last 12 months of data, intrapartum LOS for nulliparous women averaged 18.7 hours for induced labor compared with 11.2 hours for spontaneous labor. Postpartum LOS was 4.2 days for cesarean birth after failed labor induction, 3.8 days for repeat cesarean birth, and 2.0 days for vaginal birth. Although duration of labor is generally not considered when reimbursement for inpatient labor, birth, and postpartum care is determined by healthcare insurance payers, the additional costs of the extra hours of care requiring intensive nursing monitoring of maternal-fetal status, while administering a high-alert medication during elective induction as compared with spontaneous labor, is significant. Therefore, reduction in intrapartum LOS for nulliparous women by eliminating unnecessary labor inductions offers a substantial opportunity for hospitals to reduce costs while receiving the same amount of reimbursement. With the ongoing decline in the vaginal birth after cesarean birth rate,[24,32] once a woman has a cesarean, subsequent births are most likely to be via cesarean as well. A cesarean for the woman's first birth is associated with increased cumulative healthcare costs compared with other methods of birth, regardless of the number or type of subsequent births.[16] Unnecessary costs associated with childbirth, mainly unwarranted interventions lacking supportive evidence, and their clinical sequelae are passed on to all those who have private insurance and to the American taxpayers.

POTENTIAL STRATEGIES TO REDUCE ELECTIVE INDUCTIONS IN THE UNITED STATES

Quality improvement projects

Most of the recently published quality initiatives regarding elective induction have been focused on (*a*) eliminating elective inductions before 39 completed weeks of gestation to minimize risk of iatrogenic neonatal morbidity and unnecessary admissions to the special care nursery or neonatal intensive care unit and (*b*) avoiding excessive uterine activity when administering oxytocin.[33–37] Both of these factors are critical components of safe labor induction[10,14,20] but do not address cervical status prior to induction, the main issue contributing to risk of cesarean birth for nulliparous women.[3,6,12] Risk of cesarean birth is highly influenced by cervical status at the start of induction; in a recent study of more than 17 700 patients, when elective labor induction for nulliparous women began with cervical dilation of 0 cm, 50% ended in surgical birth via cesarean.[3] Two recent reports of success at decreasing elective inductions among nulliparous women with a corresponding reduction in cesarean births are highlighted as follows. It is important to note that these quality projects included the requirement of cervical readiness *without* the use of pharmacologic cervical ripening agents and were conducted in both community and teaching hospitals.

Reisner and colleagues[8] reported success at minimizing elective inductions among nulliparous women in a large community hospital by implementing a program requiring nulliparous women be at least 39 completed weeks of gestation and have a favorable cervix, defined as a Bishop score[38] of 6 or more before the procedure. This cervical readiness had to be achieved without the use of pharmacologic agents for cervical ripening. Patient information regarding specific risks of elective labor induction including longer labor, greater risk of possible side effects of medications used for labor induction such as excessive uterine activity with resultant effects on fetal status, higher incidence of operative vaginal birth, and higher incidence of cesarean birth was listed in detail on the consent form. Induction criteria based on the American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin Induction of Labor[39] were clearly delineated and formed the basis for prioritization. An interdisciplinary team approach facilitated initial program implementation and continued participation. Before the project, the cesarean birth rate of nulliparous women having elective induction was 26.9%; after the project was fully implemented, this rate decreased to 17.9%. When comparing cesarean birth rates between nulliparous women having spontaneous labor (17.9%) and those having induced labor (30.49%), cesarean birth was increased 77% among those who were induced. Elective inductions of nulliparous women decreased from 4.3% to 0.8% over the course of the project. The authors provided a list of criteria for induction prioritization and the consent form as useful appendices to their article.

Similar success was reported by Fisch et al[40] in a large teaching hospital. Guidelines for elective induction required patients to be 39 completed weeks of gestation. Nulliparous women were required to have a Bishop score of 8 or more and multiparous women a Bishop score of 6 or more without the use of pharmacologic cervical ripening agents. The guidelines were strictly enforced. From 2004 to 2007, the overall labor induction rate dropped from 24.9% to 16.6%, a reduction of 33%; the elective induction rate dropped from 9.1% to 6.4%, a reduction of 30%; the percentage of elective inductions before 39 weeks of gestation dropped from 11.8% to 4.3%, a decrease of 64%; and the frequency of cesarean birth among nulliparous women undergoing elective induction dropped from 34.5% to 13.8%, a decrease of 60%.[40] Like the Reisner et al[8] project, interdisciplinary team participation was a key aspect of sustained improvement and overall success.[40]

As evidenced by these quality improvement projects, minimizing the number of elective inductions among nulliparous women, particularly those with a decreased chance of ending in spontaneous vaginal birth, by requiring favorable cervical status quantified via Bishop score, along with 39 completed weeks of gestation, can be successful strategies in avoiding cesarean birth after labor induction. A tool to evaluate the process of care for labor induction on the basis of these principles, including safe use of oxytocin, is provided in Table 2. However some hospitals' leadership teams may be reluctant to institute strict criteria for elective inductions for nulliparous women for fear of losing market share of births if other hospitals in the area allow elective inductions without similar criteria. When physicians have privileges at 2 or more hospitals, they may choose to bring their patients to hospitals without this kind of close scrutiny. If 1 or more physicians who have a significant percentage of births at one hospital were to change their admitting practices by sending patients to a competing hospital to avoid criteria for elective labor induction, there could be negative consequences for the original hospital including loss of patient volume, the need for fewer labor nurses, and decreased revenue. This is a very real issue as birth volumes are thought to drive other types of hospital admissions. Fierce competition for births in some markets may be a discouraging factor in initiating quality improvement projects related to elective labor induction. This is especially true in smaller markets where 2 or 3 hospitals offer perinatal services and only 1 hospital has taken the lead in implementing quality labor induction processes.

Collaboration among perinatal leaders in the area in developing criteria for elective labor induction, even among those in competing healthcare systems, may be a viable option in promoting community or regional quality standards. This may occur formally through participation in regional or state perinatal quality initiatives that offer the opportunity to review current evidence and professional standards/guidelines as a group and develop successful mutually agreeable solutions that can be adopted by all hospitals in the area. Informal collaboration among leaders who meet regularly via local chapters of professional associations such as ACOG and the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) is another possible venue for promoting adoption of community or regional quality standards. When all hospitals in the area have the same quality standards for elective labor induction, the option to take patients elsewhere to avoid appropriate clinical scrutiny is eliminated, along with the risk of losing birth volume to a competing institution as a result of mandating high-quality evidence-based perinatal care. Ideally, all hospitals in the United States should have the same quality standards for elective labor induction.

Table 2. Labor induction care quality assessment tool

Expected aspects of labor induction care Aspect of care			Results
≥39 completed weeks of gestation if elective	Yes	No	NA (medically indicated)
If < 39 completed weeks of gestation, indication is consistent with ACOG (2009) clinical indications	Yes	No	NA (elective)
Cervical readiness (Bishop score 8 or more for nulliparous women; Bishop score 6 or more for multiparous women) for elective induction; cervical ripening for medically indicated induction	Yes	No	
Oxytocin regime starting at 1 mU/min; increases of 1–2 mU/min; at least 30 min between oxytocin dosage increases	Yes	No	
Fetal status is normal	Yes	No	
Appropriate and timely interventions for tachysystole[a] if it occurs (treatment is not delayed until the FHR pattern is indeterminate/abnormal). Use tachysystole tool[b,10] to evaluate care if it occurs	Yes	No	NA (tachysystole did not occur)
Compliance with all expected aspects of care	Yes	No	

Abbreviations: ACOG, American College of Obstetricians and Gynecologists; FHR, fetal heart rate; NA, not applicable.
[a]Standard definition of tachysystole (more than 5 contractions in 10 min [averaged over 30 min], contractions lasting 2 min or more, or contractions of normal duration occurring within 1 min of each other); an indeterminate/abnormal FHR pattern or the woman's perception of pain is not included in the definition.
[b]For tachysystole tool, see Simpson and Knox.[10]

Reorganization of care

The Laborist Model

Although most labor nurses, midwives, and obstetricians do their best to give excellent care, our current system for providing the continuum of perinatal care has several flaws.[21] Obstetricians often start the day in the very early morning with inpatient rounds, followed by surgery, office hours (that may be interrupted by returning to the hospital to attend births), and after office hours, inpatient rounds of laboring patients and postoperative patients. Births may occur in the middle of the night requiring return to the hospital, affecting the ability to get a good night's rest with the resultant sleep deprivation potentially affecting the care of patients the next day. This quality of life is not sustainable for most obstetricians for many years as a significant number give up the practice of obstetrics entirely as they get older and limit their practice to gynecology. As more obstetricians are now women, this lifestyle is challenging with the demands of motherhood. To manage their practice (and personal and family lives) more effectively, elective inductions are often scheduled so that births will occur during the days and times convenient to the obstetrician; callbacks to the hospital on off-shifts, weekends, and the middle of the night are minimized with avoidance of the inconvenience of spontaneous labor.

An alternative, more rational, hospitalist model of care has been proposed.[41] In this model, primary obstetricians would provide all prenatal and outpatient postpartum care but have the option of handing off care during labor, birth, and the immediate postpartum period to an in-house obstetrician or "laborist."[41] Laborists would see the laboring woman on admission, collaborate with the labor nurse in managing labor, attend the birth, and oversee care during the immediate postpartum period. There is a perception that patients would not accept birth attendance by anyone other than the obstetrician who provided prenatal care, yet this is often current reality for patients of obstetricians in group practices. Similar to the relationship that is developed between the labor nurse and patient/family members, close attention of the laborist during labor would foster patient/family trust in having the laborist attend the birth. The laborist would work 12-hour shifts and be required to be awake and actively engaged in the management of labor patients in addition to attending births. Professional liability insurance would be covered by the hospital.[41] The laborist model is not the same as some models where 24/7 in-house obstetrician coverage is provided, but the role of the covering obstetrician is for emergencies only rather than labor management and birth attendance; thus, there is a reasonable expectation of sleep unless called for an emergency. The laborist model has many advantages including the context in which criteria for labor induction, augmentation, and cesarean birth for labor arrest would be uniformly applied, and the timing of birth completely irrelevant to the primary obstetrician or

quality of life issues.[21] A similar model could be developed for midwifery care.

Widespread adoption of the laborist model in the United States will likely not occur without an "unbundling" of the current global reimbursement fee for pregnancy care. Under the existing global fee structure, not attending the birth could result in loss of 50% to 100% of reimbursement to the primary obstetrician for care related to pregnancy. Separating reimbursement for outpatient and inpatient care with a higher percentage of the fee allocated to outpatient or preventative care would allow obstetricians to receive fare compensation for preconception, prenatal and postpartum care provided in the office and assist hospitals in funding the laborist program. Obstetricians who choose to provide outpatient and inpatient care would continue to be able to collect both fees. Although it represents a radical change, the laborist model has significant merit and should be seriously considered as one way to improve quality of physician care during labor and birth and avoidance of elective procedures to coincide with physicians' schedules.

Nurse-to-patient ratio

The current nurse-to-patient ratio recommended for labor induction (1 nurse to 2 patients during oxytocin induction or augmentation of labor),[42] if the 2 patients are interpreted to be 2 women in labor, is unrealistic, given the accompanying expectations for frequencies of maternal-fetal assessments (every 15 minutes in the first stage of labor and every 5 minutes during the second stage of labor),[42] in addition to other supportive clinical care and considerable medical record documentation. This ratio does not consider the patient safety implications of administering and closely monitoring the potential side effects of oxytocin, a high-alert medication.[4,10] It could be argued that the current American Academy of Pediatrics (AAP) and ACOG[42] staffing recommendation of 1 nurse to 2 patients during labor induction and augmentation is consistent with limiting care to no more than 1 laboring women, because the woman and her fetus are actually 2 patients. A nurse-to-laboring woman staffing ratio of 1:1 during labor induction and augmentation is best practice if the recommended maternal-fetal assessments are to be realistically accomplished in the context of safe and effective nursing care.[10,43]

Reevaluation and clarification of the existing but outdated nurse staffing recommendations for labor induction and augmentation[42] require urgent attention by AAP, ACOG, and AWHONN. Nurse staffing ratios for inpatient perinatal care should be developed by an interdisciplinary team with representatives from all 3 associations as active participants as this approach for key decisions affecting the process of care is a fundamental patient safety principle.[44] As a benefit, in addition to improving quality of care, the economic and operational implications of changing national staffing standards to one nurse-to-one laboring woman for labor induction and augmentation may discourage institutional support for routine elective labor induction due to higher personnel costs and limited availability of experienced labor nurses.

Fiscal strategies

Consistent with the less than ideal system for providing the continuum of perinatal care, the current reimbursement process seems to be based in part on perverse incentives that subtly encourage practices that are not always in the best interests of mothers and newborns. As such, fiscal strategies may be helpful in righting the course of perinatal care when implemented in concert with other approaches and could be considered as a component of the ongoing efforts to reform the healthcare system. Fiscal strategies can be categorized as *risk sharing* (higher copayments by patients; lower reimbursement to physicians), *denial of coverage/payment* (as for other elective procedures), *financial disincentives* for some types and outcomes of labor induction (elective births before 39 completed weeks of gestation; complications of non–evidence-based care such as prolonged periods of excessive uterine activity during oxytocin administration resulting in unnecessary cesarean birth when the fetus does not tolerate this physiologic stress), and *direct financial rewards* to high-performing perinatal providers and facilities.

In a risk-sharing model, nulliparous women who desire elective induction before 41 weeks of gestation and/or have unfavorable cervical status (Bishop score <8) would be required to remit a larger copayment than is standard under their healthcare insurance plan, regardless of the outcome of the elective induction. Although this model may be perceived as being discriminatory against lower-income families, there already exists some disparity in options for having elective induction based on insurance status; elective inductions are more common in privately insured patients in community hospitals when compared with patients enrolled in Medicaid in inner-city and/or teaching hospitals.[29] Risk sharing would also extend to providers. Those who perform elective labor inductions before 41 weeks and/or in the context of an unfavorable cervix would receive less reimbursement as a trade-off for the "convenience of avoiding spontaneous labor."

Denial of coverage for some elective or cosmetic procedures (eg, breast augmentation not associated

with postmastectomy reconstruction after breast cancer; "tummy tucks"; treatment for "spider veins") is common in both private and Medicaid insurance plans; elective induction before 41 weeks for nulliparous women with an unfavorable cervix with its associated risks of maternal and neonatal morbidity may be considered in the same realm. However, in light of the results of the recent systematic review on elective induction,[22] it seems prudent to forestall any far-reaching reimbursement policy of this nature until (if ever) more rigorous evidence is available based on large, prospective, randomized controlled trials in the United States comparing maternal and neonatal outcomes of elective induction with expectant management for nulliparous women between 39 and 41 weeks of gestation. Other aspects of financial disincentives may be further options. Financial disincentives for providers who schedule elective inductions before 39 completed weeks of gestation and for institutions when infants are admitted to the special care nursery or neonatal intensive care unit with symptoms of iatrogenic prematurity under these conditions could be considered since routine elective inductions before 39 completed weeks of gestation should not be performed and hospitals should have policies that do not allow these types of inductions.[45]

Financial disincentives for care practices contrary to current evidence and/or professional standards and guidelines are already operational for government-funded healthcare and likely to be adopted by private insurance payers. Since October 1, 2008, the Centers for Medicare & Medicaid Services is no longer paying for treatment to remedy an adverse event for 12 specific hospital-acquired conditions (HAC) that it judges could have been reasonably prevented with the adoption of accepted evidence-based practices.[45] Additional HACs that will fall under these rules are under consideration for implementation in 2009 and 2010. There are several perinatal care practices that could be considered as they are inconsistent with current accepted evidence and professional standards/guidelines and known to be associated with preventable adverse outcomes. In addition to birthing infants electively before 39 completed weeks of gestation with subsequent neonatal morbidity, administering excessive amounts of the high-alert medication oxytocin (medication error) with associated unrecognized and untreated uterine tachysystole that lead to fetal compromise and an unnecessary emergent cesarean birth (adverse drug event) may be worthy of consideration as an HAC for which reimbursement could be decreased.[45] Administering higher than recommended doses of prostaglandin agents such as misoprostol for cervical ripening and labor induction that produce similar outcomes is also considered non–evidence-based care and therefore could be subject to the same financial disincentives.[45]

Quality care and payment for healthcare should be aligned.[30] The current payment system fosters costly procedure-intensive perinatal care that is inappropriate for many mothers and infants.[30] For example, there are financial incentives for primary cesarean birth and elective prenatal ultrasounds,[30] whereas there are no financial *dis*incentives for choosing elective labor induction for nulliparous women before 41 weeks with an unfavorable cervix although it is known to be costlier than spontaneous labor, especially when failed induction leads to cesarean birth.[31] Meanwhile, most women lack coverage for various effective preventive services such as prepared childbirth classes, newborn care classes, breast-feeding classes, breast-feeding support after hospital discharge, and postpartum and newborn home visits. To improve health outcomes of mothers and infants and obtain better value from the vast healthcare dollars expended, new reimbursement processes and systems that support the best perinatal care focusing on evidence-based intrapartum care as well as prenatal and postpartum prevention and wellness are vital.[30] Financial incentives for women to choose high-performing perinatal care providers and facilities (no copayments or lower copayments) and direct financial rewards to high-performing perinatal providers (higher reimbursement for spontaneous labor for healthy nulliparous women without medical indications for induction) and facilities (higher reimbursement for those with top scores on The Joint Commission [TJC] perinatal performance measures[46]) may be further effective strategies.[30]

Perinatal quality performance measures and public reporting

In 2008, the National Quality Forum convened a group of perinatal experts to develop national voluntary consensus standards for perinatal care; the final version including 17 measures was published in early 2009.[47] In February 2009, TJC invited a group of perinatal experts to review the National Quality Forum recommendations and select a subset for TJC core performance measures for perinatal care. During this process, 5 measures were selected to be published in October 2009 and apply to hospital discharges starting April 1, 2010.[46] Two of TJC perinatal performance measures (elective births before 39 completed weeks of gestation and cesarean rate for low-risk [singleton, vertex] first-birth women)[46] have direct application to elective labor induction, as hospitals should have policies that do not allow elective induction before 39 completed weeks of gestation and cesarean birth is a known risk of elective labor induction for nulliparous women

before 41 weeks with an unfavorable cervix. Public reporting of these measures through TJC's Quality Check Web site may be a catalyst for hospitals and healthcare systems to improve their quality performance related to elective labor induction and therefore minimize the rate of this unnecessary procedure. Consumers now have the opportunity to compare quality ratings among hospitals in their geographic setting and use these data to select hospitals and their affiliated physicians or nurse midwives. Childbearing women may be more likely to choose hospitals with higher-quality ratings including elective births at the appropriate time and low rates of cesarean birth for nulliparas.

Patient education

There are limited data regarding patient education on associated risks of elective labor induction as a strategy to reduce the rate. A recent study of more than 3300 nulliparous women found that this type of education in the context of prepared childbirth classes was effective in discouraging women from choosing elective induction although physicians suggesting elective induction was a powerful counterinfluence.[48] Physicians offering the option of elective induction before 41 weeks of gestation and/or favorable cervical status can lead to unnecessary elective inductions with their associated risks; therefore, this practice should be discouraged. Despite physician influence, in this study, nearly two-thirds of women who did not have an elective induction indicated that the information provided in prepared childbirth classes was a factor in their decision.[48]

Prepared childbirth classes may be an effective venue to provide information to nulliparous women regarding risks of elective induction. However, not all first-time mothers attend prepared childbirth classes and this number is declining according to recent evidence from the Listening to Mothers Survey II[49] (56% in 2005 compared with 70% in 2001 to 2002). Support and encouragement to attend prepared childbirth classes could be offered to nulliparous women by physicians, midwives, and nurses during the prenatal period. In the context and time frame of an educational setting that is much longer and may be less intimidating than a routine prenatal visit, women may feel freer to ask detailed questions and have the chance to be more fully informed about important topics such as the process and potential risks of elective induction. Costs of prepared childbirth classes should be a covered benefit of both government-supported and private healthcare insurance plans.

Prenatal office visits offer additional opportunities to discuss risks of elective induction with pregnant women and may be the sole setting for patient education for women who do not have the means or choose not to attend prepared childbirth classes. ACOG[14] recommends counseling women regarding indications for induction, pharmacologic agents and methods, and possible need for repeat induction or cesarean birth before initiating the procedure. Nulliparous women with an unfavorable cervix should be informed about a 2-fold increased risk of cesarean birth.[14] On the basis of the Listening to Mothers Survey II,[49] women overwhelmingly expressed a desire for information regarding potential risks of elective induction; nearly all first-time mothers surveyed wanted to know every complication (74.7%) or most complications (24%) of labor induction.[49] ACOG,[50] Lamaze International,[13] and the March of Dimes[52–54] offer patient information that could be useful in this effort. More data on effective patient education related to risks of elective induction are needed; however, in the interim, on face value patient education on this topic seems to be an important tool.

SUMMARY

Given the clinical, operational, quality, and economic implications of elective labor induction, this unnecessary procedure is a growing public health problem. As it is a multifaceted problem, to minimize the rate of elective labor induction in the United States, multiple combined strategies will be required for success and should include childbearing women, healthcare insurance payers, clinicians, professional associations, quality agencies, hospitals, and healthcare systems. These recommended conservative strategies, based on cumulative evidence and professional standards/guidelines, will create conditions that promote higher quality and safer care as well as decrease the likelihood of preventable maternal and neonatal morbidity and other adverse outcomes. The collective good of mothers and infants, rather than convenience, should be the driver of safe, effective, and quality perinatal care.

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