

## OBSTETRICS

# A statewide initiative to reduce inappropriate scheduled births at 36<sup>0/7</sup>–38<sup>6/7</sup> weeks' gestation

The Ohio Perinatal Quality Collaborative Writing Committee



**OBJECTIVE:** We sought to reduce scheduled births between 36<sup>0/7</sup>–38<sup>6/7</sup> weeks that lack appropriate medical indication.

**STUDY DESIGN:** Twenty Ohio maternity hospitals collected baseline data for 60 days and then selected locally appropriate Institute for Healthcare Improvement Breakthrough Series interventions to reduce the incidence of scheduled births. Deidentified birth data were analyzed centrally. Rates of scheduled births without a documented indication, birth certificate data, and implementation issues were shared regularly among sites.

**RESULTS:** The rate of scheduled births between 36<sup>0/7</sup>–38<sup>6/7</sup> weeks without a documented medical indication declined from 25% to <5% ( $P < .05$ ) in participating hospitals. Birth certificate data showed inductions without an indication declined from a mean of 13% to 8% ( $P < .0027$ ). Dating criteria were documented in 99% of charts.

**CONCLUSION:** A statewide quality collaborative was associated with fewer scheduled births lacking a documented medical indication.

**Key words:** collaborative, quality improvement, scheduled birth

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Scheduled induction of labor or cesarean birth is recognized by the American College of Obstetricians and Gynecologists (ACOG) as appropriate only when justified by medical or obstetric complications.<sup>1</sup> Some indications for scheduled birth require prompt delivery regardless of gestational age for maternal

## ★ EDITORS' CHOICE ★

and/or fetal safety (eg, severe preeclampsia), while others are scheduled to reduce the likelihood of complications (eg, maternal anticoagulant thromboprophylaxis) or because of a fetal anomaly expected to need immediate intervention after delivery. Because infants born <39 weeks' gestation more often require neonatal intensive care unit (NICU) admission and have increased rates of neonatal and infant morbidity and mortality,<sup>2-5</sup> ACOG recognizes social or soft indications (eg, a history of fast labor, long distance to the hospital, maternal psychosocial discomfort) as appropriate *only* when the gestational age has been firmly established as  $\geq 39$  weeks, and the mother has been thoroughly informed about the risks and alternatives to scheduled birth.<sup>1</sup> Births for nonmedical reasons such as the convenience of the patient, her family, and/or her caregivers should be scheduled only  $\geq 39^{0/7th}$  weeks because maternal and infant morbidity and mortality are significantly lower than at 36–38 weeks of pregnancy.<sup>6</sup>

Birth certificate data provide uncertain estimates of the frequency and indications for scheduled births <39 weeks,<sup>7</sup> but the frequency of scheduled births between 36<sup>0/7th</sup>–38<sup>6/7th</sup> weeks increased substantially between 1990–2006.<sup>8</sup> The

Ohio Perinatal Quality Collaborative (OPQC) is a consortium of Ohio perinatal clinicians, hospitals, and policy makers founded in 2007 to pursue a mission of using collaborative improvement science methods to reduce preterm births and improve outcomes of preterm newborns in Ohio as rapidly as possible.<sup>9</sup> OPQC was funded in part by the Ohio Department of Jobs and Family Services to develop a statewide collaborative network of perinatal care sites aided by a central staff with expertise in quality improvement, data management, perinatal vital statistics, neonatology, and maternal fetal medicine. OPQC was charged to establish an ongoing statewide quality collaborative that would promote rapid adoption of care strategies known to reduce perinatal and infant morbidity and mortality in Ohio, and be reflected in state vital statistics. The growing number of NICU admissions of infants born at 36–38 weeks prompted selection of this topic by OPQC obstetric participants.

## MATERIALS AND METHODS

### The OPQC

Twenty maternity and neonatal care hospitals in the 6 major metropolitan areas of Ohio accounting for 47% of all Ohio births agreed to share patient-level data from limited datasets that contain no identifiers other than month and hos-

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For Editors' Commentary,  
see Table of Contents



See related editorials, pages 207  
and 208

**TABLE 1****Recommended practices**

- Promotion of ultrasound confirmation of gestational age <20 wks among:
  - All prenatal care providers and clinics
  - Hospital personnel
  - Pregnant women
- Promotion and adoption of American College of Obstetricians and Gynecologists Scheduled Birth Criteria
  - Excellent dating criteria (set or confirmed by ultrasound <20 wks' gestation)
  - Scheduled birth for social or soft indications only >39 wks by excellent dating criteria
  - Adoption of a Scheduled Birth Form
    - Dating criteria optimal (confirmed or set by <20-wk ultrasound) or not optimal (all others)
    - Specific indication for scheduled birth
    - Documented discussion of risks and benefits of scheduled birth
- Improved obstetric-pediatric communication
  - Chart documentation of clear patient hand-offs
  - Statistics reported monthly to physicians, nurses, and administrators
- Culture of safety
  - Discussion at department and quality meetings

Ohio Perinatal Quality Collaborative Writing Committee. A statewide initiative to reduce inappropriate scheduled births. *Am J Obstet Gynecol* 2010.

pital of birth. Participating sites signed data-sharing agreements with OPQC that specified common confidentiality and privacy principles. OPQC and member sites all obtained institutional review board approval to share the results of deidentified data housed in a central perinatal quality improvement database at Cincinnati Children's Hospital Medical Center, Cincinnati, OH. Encrypted data are transferred electronically to OPQC via a secure, password-protected, World Wide Web-based extranet. The Health Insurance Portability and Accountability Act–specified, limited data set procedures are used for all OPQC improvement projects.

The initial project was chosen based on the following weighted criteria: documented geographic variation in population-based Ohio outcomes, available high-quality evidence, feasible interventions, demonstrated change by others using improvement methods, population impact (defined as the proportion of births affected and significant associated morbidity), and enthusiasm from clinicians. Topics considered included optimal use of antenatal corticosteroids, appropriate hospital for delivery of very low birthweight infants, and reduction of scheduled deliveries without apparent medical or obstetric indication at 36–38 weeks gestational age. Reduction of in-

appropriate scheduled births at 36–38 weeks was chosen because of the large number of affected pregnancies, the existence of a clear practice benchmark (ACOG practice bulletin no. 10<sup>1</sup>), and strong enthusiasm from clinicians. The project goal was a 60% reduction in the rate of scheduled births that lacked documentation of an appropriate indication for the aggregate of all sites within 1 year.

Sites were asked to create an improvement team that included at least 1 nurse, data manager, and physician. Teams agreed to participate in monthly telephone calls and 3 face-to-face learning sessions. The OPQC Scheduled Birth Initiative was formally introduced at each site in September 2008 after the first learning session, where obstetric teams met for 2 days to learn about the rationale for the project and the Institute for Healthcare Improvement Breakthrough Series techniques of introducing and sustaining health improvement projects (<http://www.ihl.org/ihl>).

The key drivers, including a list of interventions that might enable achieving the goal, were developed by OPQC Project Team faculty. These included promotion of optimal determination of gestational age with ultrasound; use of ACOG criteria for the indication and timing of scheduled births; increased awareness among pregnant women,

nurses, and physicians of the risks and benefits of births between 36–38 weeks; improved communication between obstetricians and pediatricians; and inclusion of scheduled births as part of an overall culture of safety. Practices recommended to facilitate these steps are shown in Table 1.

Each site selected interventions based on the key drivers and modified them as appropriate for local use. Sites were encouraged to adopt as many of these interventions in whatever order they deemed appropriate to their site, to accomplish the goal of a 60% reduction in scheduled births that lacked documentation of a medical or obstetric indication.

A scheduled birth was defined as one in which induction of labor or cesarean birth was scheduled in advance. This definition thus included women admitted to the hospital specifically for delivery, and women already hospitalized whose birth was scheduled prior to the day of delivery.

Data were collected on a standard OPQC Scheduled Birth Data Form (Appendix 1), deidentified, and then reported electronically to OPQC by a data abstractor/coder at each site who reviewed inpatient and outpatient medical records and hospital data to determine the number of scheduled births each month between 36<sup>0/7</sup> weeks and 38<sup>6/7</sup> weeks. The OPQC Scheduled Birth Data Form listed most standard indications for scheduled birth (eg, maternal diabetes, hypertension, fetal growth restriction or anomalies). The initial form lacked specificity and proved incomplete, so that coders too often entered free text instead of checking a listed indication (eg, maternal prophylactic anticoagulation was not listed as a reason for scheduled birth). A modified version of the form that included a more comprehensive list of potential indications for scheduled birth was introduced in July 2009. The revised form generates far fewer “other” or free text entries, and includes medical conditions such as seizure disorder, substance abuse, and advanced maternal age, that were entered in free text on the initial version of the form. We wanted to monitor the actual reasons listed by physicians as the ratio-

TABLE 2

**Outcomes and process measures**

- Percent of scheduled deliveries 36<sup>0/7</sup>-38<sup>6/7</sup> wks with and without medical or obstetric indication documented
- Number of scheduled deliveries 36<sup>0/7</sup>-38<sup>6/7</sup> wks without medical or obstetric indication documented
- Percent of scheduled deliveries in which the medical record documented a discussion with the mother of the risks and benefits of scheduled births
- Percent of scheduled births in which the method used to establish the due date was recorded
- Percent in which the method used to establish the due date was optimal (ultrasound <20 wks' gestation) that set or confirmed gestational age
- Percent of infants of scheduled deliveries 36<sup>0/7</sup>-38<sup>6/7</sup> wks without medical or obstetric indication documented who went to a neonatal intensive care unit, special or intermediate care nursery within 2 h of birth

Ohio Perinatal Quality Collaborative Writing Committee. A statewide initiative to reduce inappropriate scheduled births. *Am J Obstet Gynecol* 2010.

nale for scheduling a birth. Notably, ACOG does not offer a proscriptive list of appropriate vs inappropriate reasons. The responsibility to assess the appropriateness of the listed indications remained with the local quality assurance committees. For example, maternal seizure disorder is a condition that does not mandate a scheduled birth, yet some women might benefit from it. Epilepsy is a disorder that may be exacerbated by disturbed sleep or increased stress, and anticonvulsant medications may complicate administration of labor analgesia and anesthesia. Charts that listed the indication as *elective*, or that lacked any documentation of a reason for scheduled birth were coded as lacking a medical or obstetric indication for scheduled birth.

OPQC staff generated monthly aggregate and site-specific reports in which outcomes and process measures (Table 2) were tracked for each site and the aggregate of all sites. Each site received its own data and the aggregate report each month, and could share some or all of their data with other sites if they wished during monthly conference calls, periodic webinars, and the second and third learning sessions.

In addition to OPQC-generated data, participants were also able to review birth certificate data from their sites and in aggregate, collected by Ohio Department of Health vital statistics staff and reported to OPQC within 6 weeks of collection. Ohio birth certificate statistics include documentation of scheduled in-

ductions of labor performed only for infants who have a birthweight >10th percentile, and who are born to mothers who do not have pregestational or gestational diabetes, gestational or pregestational hypertension, eclampsia or pre-eclampsia, premature rupture of the membranes, poor pregnancy outcomes, augmentation of labor, chorioamnionitis, or any one of numerous birth defects ranging from neural tube defects to hypospadias. Inductions of labor performed for placental abruption or placenta previa are not excluded. Scheduled cesarean births are not tracked by the Ohio birth certificate records. Thus this measure differs substantially from the information collected by OPQC, and is subject to the usual limitations of birth certificate data.<sup>7</sup> Nevertheless, as a metric in place since 2006, the Ohio birth certificate data provided an independent measure of some of the targeted births that might be expected to decrease if our intervention were successful.

**Statistical analysis**

Because the project has an interrupted time series design, we used statistical process control methodology to detect change in processes of care and outcomes in birth certificate data.<sup>10-13</sup> We used a proportion chart to assess changes in proportion of the number of scheduled deliveries over time. The period of December 2007 through August 2008 was used as a preintervention reference baseline to calculate a center line (mean

or median) and control limits. Once baseline data are displayed, data values are added monthly and monitored for evidence of significant change using standard statistical process control rules. These rules predict that, if the system of care does not change significantly, subsequent data values added after establishing a baseline will vary randomly around the center line and within the control limits. In contrast, significant changes in the system of care will produce nonrandom patterns characterized by the standard statistical process control rules. For example, a run of  $\geq 8$  consecutive values below the center line or a point outside one of the control limits would be identified as a significant change. We did not do any random sampling or random allocation for these data, so  $\chi^2$  and other enumerative statistical methods are not appropriate.

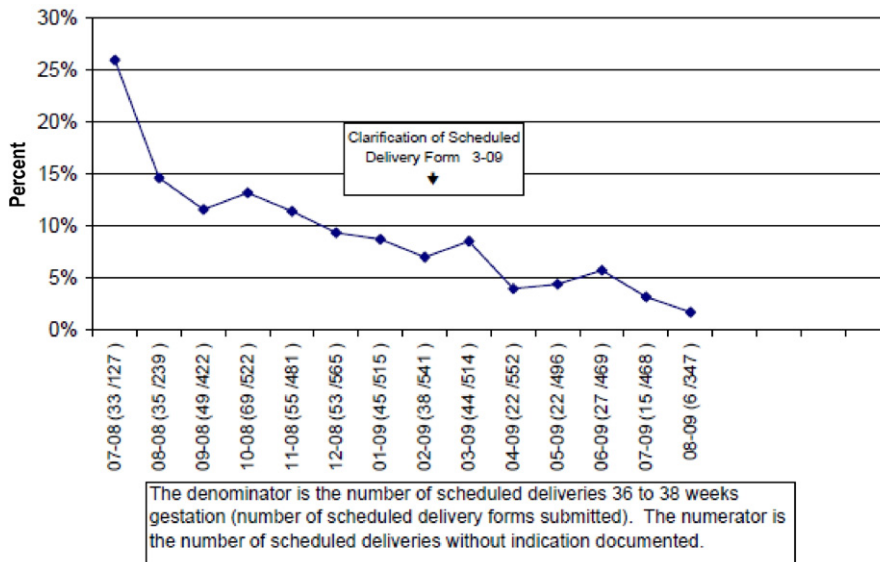
We applied  $\chi^2$  analysis to assess the proportion of births between 36-38 weeks vs >39 weeks as the project progressed, using September 2008 as the starting point of the postintervention period.

**RESULTS**

Scheduled births were tracked at each site in July and August 2008. The initiative was introduced in September 2008 after the first learning session. There were 18,384 births between 36<sup>0/7</sup> weeks and 38<sup>6/7</sup> weeks of gestation at the 20 participating hospitals in the 14-month period between July 1, 2008, and Aug. 31, 2009. (See Appendix 2 for list of hospitals.) Of these, 4780 (26%) were scheduled births, and 13,604 (74%) were unscheduled.

The rate of scheduled births in member hospitals between 36<sup>0/7</sup>-38<sup>6/7</sup> weeks that lacked documentation of a medical or obstetric indication declined from 25% in July 2008 to <5% in August 2009 ( $P < .05$ ) (Figure 1). The reported number of scheduled births lacking documentation of a medical or obstetric indication declined from a high of 69 births in October 2008 to 6 in August 2009 (shown in the numerators in parentheses in the legend of Figure 1).



**FIGURE 1**  
**Aggregate report**

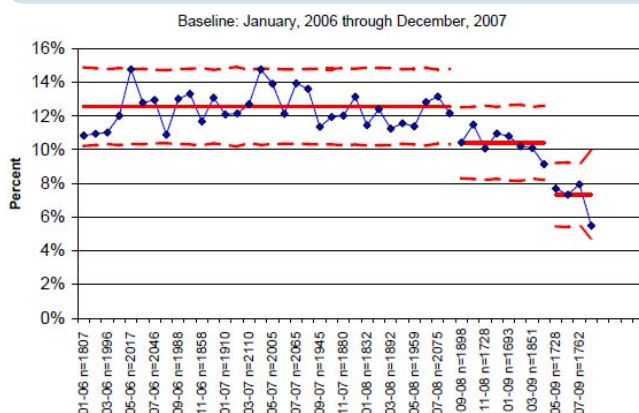
Percent of scheduled deliveries at 36<sup>0/7</sup>-38<sup>6/7</sup> weeks without medical or obstetric indication documented.

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Rates of the primary outcome decreased across all sites. The range narrowed from 0-45% in July and August 2008, to 0-8% in August 2009.

Because the decreased rate could have occurred in whole or in part by changes

in documentation, we also used Ohio Department of Vital Statistics records to monitor the rate of inductions of labor between 36-38 weeks that lack a medical indication on the birth certificate. The rate beginning in January 2006 through

**FIGURE 2**  
**Percent of births at 36-38 weeks induced without medical or obstetric indication**

↑ (arrow indicates OPQC startup)

Arrow indicates OPQC startup; dotted line indicates aggregate rate of participants; \_\_\_\_\_ line indicates the mean rate; - - - - line indicates control limits of the rate.

Ohio Perinatal Quality Collaborative Writing Committee. A statewide initiative to reduce inappropriate scheduled births. *Am J Obstet Gynecol* 2010.

August 2009 (Figure 2) for all OPQC member sites declined after the introduction of the OPQC project from a 12-month mean of 13% to 8% ( $P < .0027$ ). The solid line indicates the mean and the dotted line the control limits for the preceding 8 months.

We further reasoned that a true decline in scheduled births between 36-38 weeks should induce a corresponding rise in births between 39-41 weeks at OPQC member hospitals. Ohio Department of Vital Statistics data shown in Figure 3 suggest that this did in fact occur. The proportion of births at 36-38 weeks recorded on birth certificates at member hospitals fell from 0.3329 before intervention (January 2006-August 2008) to 0.3076 postintervention (September 2008-July 2009). The proportion at 39-41 weeks increased from 0.5637-0.5917. The  $\chi^2$  probabilities for 36-38 and 39-41 weeks are both  $<0.0001$ . These changes suggest that approximately 1000 births were moved from 36-38 to  $>39^{0/7}$  weeks during the 12-month intervention period described in this report.

Finally, we tracked the percent of infants born after scheduled births between 36-38 weeks without a medical indication who were admitted to a NICU or special care nursery within 2 hours of birth. The monthly rate ranged between 0 and 5.7% for the first 6 months of the project and has remained at 0% since March 2009. However, NICU admissions for infants born at 36-38 weeks are often preceded by a period of observation in the transitional or well baby nursery that exceeds 2 hours, so this metric has been abandoned by OPQC. We are currently working with Ohio Vital Statistics and payers to develop a system of tracking overall and gestational age-specific NICU days in participating hospitals.

Use of process measures increased as the project progressed. The percent of scheduled births in which the method used to establish the due date was recorded increased from 91.2% (335/367) during the observation period (July and August 2008) to 98.0% (947/966) in August and September 2009. The percent in which the documented dating method

was optimal (confirmed or set by an ultrasound <20 weeks) increased from 73.8% (271/367) in July and August 2008 to 85.2% (823/966) in August and September 2009. The percent of scheduled deliveries with documentation in the medical record that the risks and benefits of scheduled delivery at 36.0–38.6 weeks were discussed with the mother increased from 13.6% (50/367) in July and August 2008 to 26.0% (251/966) in August and September 2009.

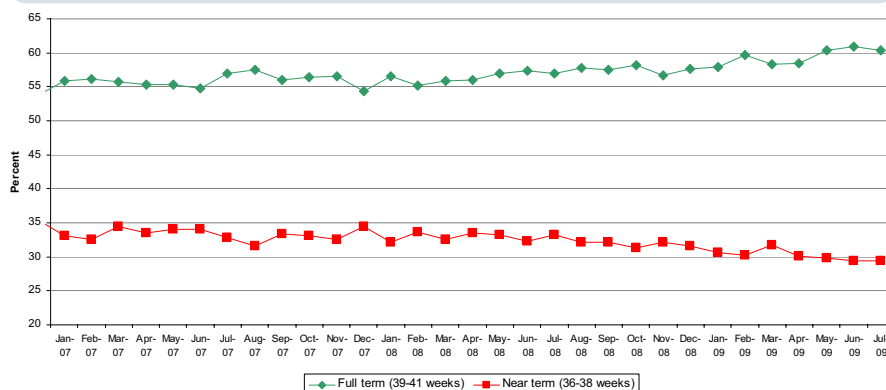
## COMMENT

Neonatal and infant morbidity is increased when birth is scheduled <39 weeks' gestation in women with otherwise uncomplicated pregnancies.<sup>2,3</sup> Our data support the conclusion that the OPQC obstetric quality improvement project was responsible for a significant decrease in the number and rate of scheduled near-term births that lack medical or obstetric indications at participating sites between July 2008 and August 2009. We present evidence that fewer births were scheduled electively <39 weeks' gestation but a large portion of the decline should also be attributed to improved documentation of the reasons for scheduled birth. Among the reasons for scheduled birth listed on the OPQC data form (Appendix 1) are some that require prompt delivery regardless of gestational age (eg, preeclampsia, abruption, or fetal growth restriction). However, many are conditions for which a scheduled birth is preferable to an unscheduled birth, but that do not require the birth to occur <39 weeks (eg, malpresentation, maternal anticoagulant prophylaxis, and the most common, prior cesarean birth). In the future, we will examine and report the indications for scheduled birth by gestational age. These data will allow OPQC sites to assess the appropriateness of the gestational age selected for each indication.

Similarly successful improvement programs targeting the same endpoints have been reported by Oshiro et al<sup>4</sup> in an integrated health care system in Utah, and by Fisch et al<sup>14</sup> in a single hospital. Insurance companies have developed similar programs that have a financial

FIGURE 3

### Gestational age distribution of births at Ohio Perinatal Quality Collaborative member hospitals, by month



The proportion of births at 36–38 weeks fell from 0.3329 before intervention (Jan. 2006–Aug. 2008) to 0.3076 postintervention. The proportion at 39-plus weeks increased from 0.5637 to 0.5917. The  $\chi^2$  probabilities for 36–38 and 39-plus are both < 0.0001. 2% decrease in births 36<sup>0/7</sup> to 38<sup>6/7</sup> weeks and 2% increase in births 39<sup>0/7</sup> to 41<sup>6/7</sup> weeks. Approximately 1000 births moved to >39<sup>0/7</sup> weeks.

Ohio Perinatal Quality Collaborative Writing Committee. A statewide initiative to reduce inappropriate scheduled births. *Am J Obstet Gynecol* 2010.

authority that our project does not enjoy. In contrast, OPQC is a new, statewide voluntary quality collaborative of maternity hospitals in which participants support the costs of gathering and entering their data into the OPQC World Wide Web site. Participating sites had variable but limited prior experience with obstetric quality improvement projects in general, and with projects related to scheduled births specifically. It is important to emphasize that OPQC is a voluntary organization that receives and analyzes data but has no regulatory function. OPQC provides a forum for collaborative discussion of aggregate and local data to member hospitals for their use to learn to advance quality together. OPQC has no authority to audit or verify the accuracy of the data reported to its secure central data repository, or to reprimand individual hospitals or physicians. Those functions are reserved to each hospital.

We believe our initiative was assisted by the prompt dissemination of data collected by OPQC data personnel and by the active cooperation of the Ohio Department of Vital Statistics to provide birth certificate data within 6 weeks of delivery. Our initiative followed national conferences on preterm birth sponsored

by the Surgeon General<sup>15</sup> and the National Institute of Child Health and Human Development,<sup>16</sup> and publication of studies by Tita et al<sup>2</sup> and Clark et al<sup>3</sup> that drew attention to the issue of scheduled births. The Ohio chapters of the ACOG and the March of Dimes endorsed our project, and provided educational materials for professionals, pregnant women, and the general public. The updated ACOG Practice Bulletin on induction of labor issued in August 2009<sup>1</sup> will likely promote future acceptance of the goals of this initiative.

Review of the process measures implemented suggests that tracking the indications for scheduled births and applying existing ACOG criteria for determination of gestational age and indications for scheduled birth are the primary reasons for the improvement we observed. Improved communication with the mother about the risks and reasons for scheduled birth <39 weeks also increased, but was documented in only 26% of charts. Our goal to make scheduled birth part of a culture of safety is difficult to measure. Variation in the current improved rates of scheduled birth that lack documented medical indication suggests that this culture may

have been established at some but not all participating sites.

Obstacles to successful dissemination of this approach to reduction of perinatal and infant morbidity and mortality remain. The improvements described in this report are not certain to be maintained without continued efforts by professional and administrative staff at participating hospitals to adopt the key steps as routine hospital policies. Dissemination to all Ohio maternity hospitals is planned but at present lacks a funding source. The infrastructure developed by OPQC is not complex—staff and systems to manage and analyze data, utilize improvement science methods to provide ongoing focus and support, and communication among teams and with state agency partners—but financial support for infrastructure remains a significant impediment to expanding to other topics. Until cost incentives are demonstrated in such work, it may be seen as a special project rather than as a mechanism to maintain quality care. ■

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## APPENDIX: 1 OHIO PERINATAL QUALITY COLLABORATIVE SCHEDULED BIRTH DATA COLLECTION FORM

**OPQC SCHEDULED DELIVERY AT 36 0/7 – 38 6/7 WEEKS**

Scheduled is defined as any artificial initiation of labor or cesarean birth in a woman not in labor regardless of when it was scheduled.

(Note: if pregnancy with multiple births, one form can be used)

Facility ID: \_\_\_\_\_ Delivery Date: \_\_ / \_\_ / \_\_\_\_ Initials of Person Completing Form \_\_\_\_\_

**Scheduled Delivery was: (Please select one)**

- ☐ Induced Labor  
☐ C-Section

**Please indicate how gestational age was documented: (Please select one)**

- ☐ First or second trimester ultrasound < 20 weeks that confirmed or established due date  
☐ Second trimester scan between 20 and 28 weeks that confirmed or established due date  
☐ Third trimester scan (after 28 weeks)  
☐ LMP / Menstrual History alone (without U/S data)  
☐ Fetal Heart Tones identified by Doppler for \_\_\_\_ weeks, or by Auscultation for \_\_\_\_ weeks  
☐ Other / no dates

Was fetal lung maturity proven by amniocentesis? ☐ Yes ☐ NoWas there documentation in the medical record that the risks and benefits of scheduled delivery at 36 0/7 – 38 6/7 weeks were discussed with the mother? ☐ Yes ☐ No**Reason(s) documented in medical records for scheduled delivery at 36 0/7 – 38 6/7 weeks (check all that apply):**

- |   |   |
|---|---|
| <input type="checkbox"/> Prior uterine surgery                      | <input type="checkbox"/> Placenta previa                                  |
| <input type="checkbox"/> Low transverse C/S                         | <input type="checkbox"/> Placental abruption                              |
| <input type="checkbox"/> Other (vertical C/S, myomectomy)           | <input type="checkbox"/> Other vaginal bleeding                           |
| <input type="checkbox"/> Malpresentation (e.g., breech)             | <input type="checkbox"/> Cervical dilation > 5 cm not in labor            |
| <input type="checkbox"/> Multiple gestation (twins, triplets etc)   | <input type="checkbox"/> Prior stillbirth                                 |
| <input type="checkbox"/> History of, or anticipated difficult birth | <input type="checkbox"/> Fetal demise                                     |
| <input type="checkbox"/> Prior shoulder dystocia                    | <input type="checkbox"/> Birth defect &/or chromosomal abnormality: _____ |
| <input type="checkbox"/> Other (R-V fistula, Crohn's)               | <input type="checkbox"/> Blood group incompatibility (Rh, Kell, other)    |
| <input type="checkbox"/> Hypertension                               | <input type="checkbox"/> Fetal hydrops / ascites / arrhythmia             |
| <input type="checkbox"/> Pre-eclampsia/Eclampsia/HELLP              | <input type="checkbox"/> Polyhydramnios                                   |
| <input type="checkbox"/> Chronic hypertension                       | <input type="checkbox"/> Non-Reassuring fetal status:                     |
| <input type="checkbox"/> Diabetes                                   | <input type="checkbox"/> Non-reactive NST / Positive CST                  |
| <input type="checkbox"/> Gestational                                | <input type="checkbox"/> Decreased fetal movement                         |
| <input type="checkbox"/> Pre-Gestational                            | <input type="checkbox"/> Low amniotic fluid – oligohydramnios             |
| <input type="checkbox"/> Prior venous thrombosis / PE               | <input type="checkbox"/> Abnormal Dopplers                                |
| <input type="checkbox"/> Thrombophilia (e.g., Factor V etc)         | <input type="checkbox"/> Fetal growth restriction                         |
| <input type="checkbox"/> Mother on heparin or coumadin              | <input type="checkbox"/> Impending fetal macrosomia                       |
| <input type="checkbox"/> Maternal HSV or HIV                        | <input type="checkbox"/> Prior fast labor or lives far from hospital      |
| <input type="checkbox"/> Maternal trauma                            | <input type="checkbox"/> Elective   |
| <input type="checkbox"/> Advanced maternal age                      | <input type="checkbox"/> Other: _____                                     |
| <input type="checkbox"/> Substance use/abuse                        | <input type="checkbox"/> Not documented in chart                          |
| <input type="checkbox"/> Seizure disorder                           |   |
| <input type="checkbox"/> Cholestasis of pregnancy                   |   |
| <input type="checkbox"/> Other maternal medical: _____              |   |

**Did the infant go to the Special or Intermediate Care Nursery or the NICU within two hours of delivery?**☐ Yes ☐ No

(If multiple birth, answer yes if ANY of the babies went to a Special or Intermediate Care Nursery, or NICU).

Version 7.0

**APPENDIX :2 PARTICIPATING SITES IN THE OHIO PERINATAL QUALITY COLLABORATIVE SCHEDULED BIRTH COLLABORATIVE**

**Akron Children's Hospital - Maternal Fetal Medicine - OB**

**Akron General Medical Center - OB**

**Aultman Hospital - Canton - OB**

**Fairview Hospital - Cleveland - OB**

**Good Samaritan Hospital - Cincinnati - OB**

**Grant Medical Center - Columbus - OB**

**Hillcrest Hospital - Cleveland - OB**

**Mercy Anderson Hospital - Cincinnati - OB**

**MetroHealth Medical Center - Cleveland - OB**

**Miami Valley Hospital - Dayton - OB**

**Mount Carmel East Hospital - Columbus - OB**

**Mount Carmel St. Ann's Hospital - Columbus - OB**

**Mount Carmel West Hospital - Columbus - OB**

**Riverside Methodist Hospital - Columbus - OB**

**St. Elizabeth Health Center - Youngstown - OB**

**St. Vincent Mercy Medical Center - Toledo - OB**

**Summa Health System - Akron - OB**

**The Ohio State University Medical Center - Columbus - OB**

**The Toledo Hospital - OB**

**University Hospital Case Medical Center - MacDonald Women's Hospital  
Cleveland – OB**

**University of Cincinnati Hospital - OB**

*Ohio Perinatal Quality Collaborative Writing Committee. A statewide initiative to reduce inappropriate scheduled births. Am J Obstet Gynecol 2010.*