

Appendix A – Other Sample Forms

Form 3: March of Dimes Scheduling Template (Used with permission of the March of Dimes.)

Induction / Cesarean Delivery Scheduling Form

Requesting Physician _____ Today's Date _____

Patient's Name _____ Age _____ G _____ P _____

Medical Record # _____ Requested Procedure Date _____ ☐ AM ☐ PM

Gestational Age on Date of Procedure _____

Method of Delivery Planned: ☐ Cesarean delivery: ☐ Primary or ☐ Repeat
☐ Induction: Fetal presentation _____ EFW _____ gms Bishop Score _____

Reasons for Scheduled Delivery: *Check all appropriate indications below*

Level 1

- ☐ Chorioamnionitis
- ☐ Preeclampsia / HELLP
- ☐ Abruptio placenta
- ☐ Bleeding D/T marginal placenta previa
- ☐ Non-reassuring fetal testing
- ☐ PROM
- ☐ Fetal hydrops / isoimmunization
- ☐ Oligohydramnios
- ☐ Blood group sensitization
- ☐ Fetal compromise (severe IUGR)
- ☐ Fetal anomaly
- ☐ Maternal medical conditions
- ☐ Gestational hypertension
- ☐ Multifetal gestation

Level 2

- ☐ ≥ 41 weeks gestation / Postterm pregnancy
- ☐ Gestational diabetes
- ☐ IUGR – reassuring testing
- ☐ Fetal demise
- ☐ Maternal HIV

Level 3

- ☐ Fetal malpresentation / Unstable lie
- ☐ History of HSV
- ☐ Prior myomectomy
- ☐ Prior vertical or T-incision C/S
- ☐ Prior C/S - VBAC not indicated
- ☐ Macrosomia (EFW greater than 4000 gms)

AND
Gestational age ≥ 39 weeks*

Level 4

- ☐ History of rapid labor
- ☐ Distance from hospital
- ☐ Term with favorable cervix
- ☐ Psychological factors
- ☐ Maternal request
- ☐ Prior C/S
 - Patient declines VBAC
 - VBAC not available

AND
Gestational age ≥ 39 weeks*

☐ Other indication _____

Clinical indications (with supporting data) _____

Confirmation of gestational age:

EDC _____ determined by: *Check all that apply*

- ☐ Ultrasound obtained at < 20 weeks on _____ date @ _____ gestational age weeks confirms gestational age
- ☐ Known date of conception on _____ date associated with infertility treatment

For Level 3 or 4 indications, if EDC was not determined by above methods, then identify documentation of fetal maturity:

☐ Amniocentesis performed on _____ Results: _____

* Provide explanation if scheduling Level 3 or 4 at < 39 weeks _____

Please fax form to _____

Procedure scheduling determination:

- ☐ Level 1 or Level 2 indication scheduled as requested
Medically indicated procedure necessitates delivery prior to 39 weeks gestation
- ☐ Level 3 or Level 4 procedure scheduled as requested
Gestational age ≥ 39 weeks on scheduled procedure date per ACOG recommendation
- ☐ Level 3 or Level 4 procedure scheduling request requires further review
 - ☐ Gestational age < 39 weeks on scheduled date of procedure
 - ☐ Gestational age or fetal maturity not determined using established criteria

Completed by _____

This chart is provided for your convenience to assist in calculating the Bishop Score. The final score should be entered on the front of the form where indicated. Vaginal exams should have been performed at least within the last 7 days.

Bishop Score

Score	Dilation (cm)	Effacement (%)	Station* (-3 to +3)	Cervical Consistency	Cervical Position
0	Closed	0-30	-3	Firm	Posterior
1	1-2	40-50	-2	Medium	Midposition
2	3-4	60-70	-1	Soft	Anterior
3	≥ 5	≥ 80	+1, +2	-	-

*Station reflects a -3 to +3 scale-modified from Bishop EH Pelvic Scoring for Elective Induction, Obstet Gynecol 1964, 24(267)
Please state -5 to +5 for all other purposes.

Form 4: Tallahassee Scheduling Process (Permission to use is granted.)

Tallahassee Memorial Hospital
Women's Pavilion

Title: Induction of Labor Scheduling Process

Policy: Unless medically indicated, induction of labor prior to 39 completed weeks gestation will require approval of the OB/GYN Department chair.

Medical Indications for induction of labor include (ACOG & IHC):

- Abruptio placentae
- Chorioamnionitis
- Fetal Demise
- Pre-eclampsia or Gestational hypertension (BP \geq 140/90 times two six hours apart or B/P >160/110)
- eclampsia
- Premature rupture of membranes
- Post Term Pregnancy (\geq 41 weeks)
- Maternal medical conditions (i.e., Diabetes with insulin, renal disease, chronic hypertension, lupus, antiphospholipid syndrome, PUPPS, thromboembolism)
- Fetal compromise (i.e., IUGR, oligohydramnios, severe congenital anomalies, abnormal antenatal testing, previous stillbirth)
- Logistic or psychosocial (*with documentation of fetal lung maturity)

Confirmation of Gestational Age (ACOG):

1. Fetal heart tones have been documented for 20 weeks by non-electronic fetoscope or for 30 weeks by Doppler
2. It has been 36 weeks since a positive serum or urine human chorionic gonadotropin (HCG) pregnancy test was performed by a reliable laboratory
3. An ultrasound measurement of the crown rump length, obtained at 6-12 weeks, supports a gestational age of at least 39 weeks
4. An ultrasound obtained at 13-20 weeks confirms the gestational age of at least 39 weeks determined by clinical history and physical examination
5. Amniocentesis and documentation of fetal lung maturity

Purpose: This policy will allow for the safe delivery of obstetric care and the efficient utilization of organizational resources when elective delivery of a pregnancy is being considered.

Scheduling:

1. Provider or designee will call L&D administrative coordinator @ 431-0057 or in her absence, the Labor & Delivery Unit Coordinator @ 431-0100 .
2. Provider/designee will give indication for procedure and gestational age at day of scheduled induction.

3. L&D will accommodate no more than 5 scheduled inductions on any weekday and no more than three scheduled inductions on a weekend day. Scheduled inductions include induction of labor by any method.
4. When the need for cervical ripening is identified by the provider, two patients may be scheduled to be admitted the evening before the scheduled induction for cervical ripening.
5. Patient's with medical indications will have priority over elective inductions which may delay an elective scheduled induction at the discretion of the L&D unit coordinator.
6. Elective inductions will be scheduled no more than 7 days in advance and on a first-come first-served basis.
7. Inductions must have a **complete & updated** prenatal record (including ultrasound reports and prenatal flow sheets) faxed to 431-0065 at the time of scheduling.

Cancellation:

1. Each day the administrative coordinator or Unit Coordinator will review the next day's schedule for inductions. If there are inductions scheduled and no updated prenatal record obtained, a call will be made to the office to fax the updated prenatal record by 3pm that day. (Calls will be made on Fridays for inductions scheduled for Sat., Sun., or Mon.).
2. When the prenatal record is not faxed to L&D by 3pm the day before the scheduled induction, the patient & MD will be called to let them know that her scheduled time for her induction has been delayed because her prenatal record has not been faxed to L&D and that as soon as the MD's office faxes her prenatal record to L&D (431-0065) she will be called in for her induction.
3. The night shift L&D Unit Coordinator will assess the available resources for upcoming day shift.
4. When resources are not available due to staffing shortage or high acuity/census, scheduled inductions will be evaluated and prioritized related to their indication and delayed as needed.
5. Patients will be notified of the postponement as soon as possible.
6. Providers will be notified by 8am.
7. When a request for a medically indicated induction is made and the maximum number of scheduled inductions has been met, the L&D Unit Coordinator will have the authority to delay a previously scheduled elective induction.
8. The L&D Unit Coordinator will notify the involved provider with options for accomplishing the elective induction that has been delayed.

Admission :

1. Inductions will be admitted on their scheduled day at 6am only if prenatal record and orders are on the chart.
2. If the MD/CNM has not examined the patient on admission or prior to initiation of pitocin, a nurse will examine the patient to document presentation and bishop score. The MD/CNM must confirm the nurse's exam within 2 hours of admission.
3. Initiation of pitocin for an elective induction will begin only after induction bundle criteria #1, #2 and #3 are met (see below):

Bundle criteria:

Elective Induction :

1. Gestational age ≥ 39 weeks
2. Reassuring Fetal Heart Rate Pattern prior to initiation of Pitocin
3. Bishop score prior to initiation of Pitocin. (IHC recommendation is for bishop score ≥ 8 for multipara and bishop score ≥ 10 for primipara)
4. Identification and intervention(s) for hyperstimulation (see hyperstimulation algorithm)

References:

ACOG Practice Bulletin #10 (1999) Induction of Labor.

www.uptodate.com Oct. 4, 2006 "Induction of Labor: Indications, techniques, and complications."

IHI Impact.(2006): Idealized Design of Perinatal Care

Intermountain Healthcare (IHC) 2006. "Management of Elective Labor Induction."

Dev: 2/07

Form 5: Tallahassee Consent (Permission to use is granted)



YOUR LABOR INDUCTION

Labor induction is usually done with a medication called Oxytocin or Pitocin®. With your practitioners order, our staff will start the medication at a standard dose and increase it over time to achieve labor progress. While you are getting the medication, we will closely monitor the baby's heart rate and your contractions. The length of labor depends on how dilated or "ripe" your cervix is at the start of the induction. In general the more dilated you are, the quicker your labor. Also, if this is not your first birth, labor may be faster for you.

If your cervix is already fairly dilated, your practitioner may start your induction by breaking the bag of water. If your cervix is closed and not shortening, we may schedule cervical ripening the day before your induction. This procedure will soften and begin to dilate your cervix. Ripening will make the Oxytocin more effective when it is begun. Sometimes, the ripening process will trigger the onset of your labor.

WHY ARE LABOR INDUCTIONS PERFORMED?

Labor inductions are performed for many reasons. Clearly, some reasons are more urgent than others. Here are just a few examples:

- ✦ A woman is well past her due date
- ✦ A woman is experiencing medical problems that place her or her baby at risk, such as high blood pressure, diabetes, rupture of the bag of water, etc.
- ✦ The baby or babies may be small or the amniotic fluid too low
- ✦ Though less common elective labor induction may be done for convenience or discomfort of the mother after 39 weeks

WHAT ARE THE POTENTIAL RISKS AND BENEFITS OF LABOR INDUCTION?

It is always important to consider the potential benefits and risks of any procedure. The risks include, but are not limited to, the following:

- ✦ Labor inductions may carry a greater risk of cesarean birth delivery than do labors that start on their own, especially with an "unripe" cervix.
- ✦ Induction usually results in longer labors and may lead to a higher chance of a vacuum or forceps delivery.
- ✦ All medications have possible side effects or unintended adverse reactions. For example, it is possible to cause contractions that are too frequent and may affect the baby's heart rate. This is why careful monitoring of your baby's heart rate is necessary during labor induction.

If you are considering an elective induction, the risks may outweigh the possible benefits especially, if this is a first time labor.

CONSENT FOR INDUCTION OF LABOR

Indication for Induction: _____

I have read the above information and I have had the chance to ask my practitioner questions. All of my questions have been answered to my satisfaction. I wish to proceed with the induction.

Patient Signature

Date

Witness Signature

Date

PATIENT IDENTIFICATION

Department Approval 08/07/07

Appendix B - Hospital Case Studies

POMONA VALLEY HOSPITAL MEDICAL CENTER

Pomona, California

Case Study: Reducing non-medically indicated (elective) Deliveries prior to 39 weeks gestation

Background

Pomona Valley Hospital Medical Center is a 453 bed, nonprofit, teaching hospital that delivered 8,063 babies in 2007. Obstetric (OB) and Neonatology coverage is available 24/7 with immediate availability of maternal-fetal medicine specialists. Births have steadily decreased (6,848 in 2009), consistent with other delivering facilities locally and throughout the state. Medi-Cal provides reimbursement for 76% of patients.

In 2008, both medical and nursing leadership sought solutions for the increasing number of elective deliveries before term, resulting in longer Labor and Delivery stays, and a climbing Neonatal Intensive Care Unit (NICU) admission rate (13%). In 2007 the FDA listed oxytocin as a high-risk medication and the National Quality Forum (NQF) published 17 new perinatal quality measures including one that would monitor elective deliveries before 39 weeks; these two events reinforced the need for change.⁵⁸⁻⁶⁰

Using an Evidence-based Practice Model, a multidisciplinary quality improvement team examined national standards and available literature to draft tools, which were reviewed and amended by a core group of physicians and nurses. The ACOG guidelines, Association of Women's Health and Obstetric and Neonatal Nurses (AWHONN) Practice Monograph (Simpson, 2008) and a checklist-based method for the use of oxytocin (Clark, 2007) provided the evidence and outline for the needed changes.^{3 10} The QI team developed new clinician guidelines, along with supporting consents and checklists to reduce elective inductions. Specifically, the guidelines focused on the applicability of written informed consent, safety, liability, productivity and reducing nurse/physician conflict. A new oxytocin protocol was formatted by nurse champions (Director, Clinical Nurse Specialist, Nurse Educator, front-line managers and staff RNs) and approved by the multidisciplinary Perinatal Committee in October 2008.

Implementation of the new protocol was announced and publicized well in advance for a selected kick-off date (April 1, 2009). Department meetings and other outreach and education measures facilitated initiation and ongoing change (see Key Steps, below). Specific methods were used to

ensure compliance, including communication with physician offices about missing patient documentation and follow-up visits to offices every two weeks to review and redistribute packets of required documents for scheduling an induction (see Key Steps, below). A data tracking system was developed to monitor the number of women with elective inductions who required a cesarean section and the number of infants admitted to the NICU. Outcome and compliance results were shared with individual physicians during one-on-one discussions or group meetings. Thus, all physicians were given feedback on their rate of conformity with the new protocols and the effect their behaviors had on patient outcomes. Additional feedback was provided to non-compliant physicians in a formal letter from the Medical Director, which outlined their areas of non-compliance with the national and local guidelines.

Key Steps

- Develop a multidisciplinary Quality Improvement (QI) team that includes physicians and nurses
- Establish new policy and guidelines that require the following to schedule inductions:
 - Prenatal Record with gestational age documented per ACOG guidelines
 - Indication for induction
 - Documented Bishop Score
 - Prenatal Informed Consent for Augmentation
 - Informed Consent for Induction
 - OB H&P Short Form
 - Preprinted Physician Orders for Induction
- Educate stakeholders, and reinforce guidelines:
 - Joint Commission's Quality Measures were presented during OB Department meetings along with an algorithm to assist practitioners in identifying appropriate cases
 - Changes in the induction process and the new limitations for scheduling elective procedures was presented during a luncheon for physician office staff; sample packets and a checklist of forms were provided
 - The March of Dimes brochure "Why the Last Weeks of Pregnancy Count" was distributed to physician offices to promote patient education (brochures were available in English or Spanish)
 - Published articles in the OB department newsletter to reinforce guidelines

- Reinforced changes through a self-study program for labor nurses including in-services and rounding by the nurse educator and CNS

Barrier and Solutions

Barrier:

The labor nurses and operating room (OR) scheduler encountered conflict from physicians when told they could not schedule elective procedures prior to 39 weeks.

Solutions:

1. **Involve leaders:** After all physicians were fully apprised of the new protocol for inductions; those who disagreed were referred to the Chief of OB and the Medical Director who were responsible for answering the physician's questions and determining if an exception was warranted.
2. **Support new roles:** Nurses and schedulers were obligated only to remind the physician about the new hospital policies and ensure that patients met the induction and cesarean section criteria prior to scheduling or assisting with these procedures. In addition, the staff was reminded it was not their responsibility to defend the policies or argue with the physicians over the new limitations for elective procedures. All disputes were to be referred to physician leadership for resolution.
3. **Reinforce policy through education:** Active communication via letters, fliers, meetings and memos clarified specific questions that arose during implementation of new policies and procedures

Outcomes

One year after implementation, there were no elective inductions performed before 39 completed weeks of gestation. Additionally, preliminary data revealed the total number of inductions fell by 17% and cesarean sections due to failed inductions decreased by 21%. This improvement in practice change was observed during the first quarter of 2010 compared with the same period in 2009.

Lessons Learned

- Gather support and involve all stakeholders early in the change process.
- Perform ongoing monitoring and follow-up with physicians; early support and involvement from physicians is essential.
- Provide continued support and active communication to clerical staff in physician offices and community clinics.
- Participate in a collaborative that provides a forum for hospital leaders to obtain expert and peer mentoring on the change strategies and tactics to increase implementation effectiveness and sustained improvements over time.
 - Pomona Valley Hospital leaders participate in the San Bernardino County Maternal Morbidity and Mortality Labor Induction Education Project (MMMLIEP) as members of the Advisory and the Stakeholders Council. Participation in MMMLIEP provides the leaders with collaborative support and recognition for their efforts. The MMMLIEP project is supported and led by San Bernardino County/Department of Public Health/Maternal and Child Health and has received funding through the California Department of Public Health, Maternal, Child and Adolescent Health Division, and technical assistance through California Maternal Quality Care Collaborative (CMQCC).

Future Plans

- Continue to support OB offices and community clinics adherence to scheduling guidelines by providing packets with required induction forms and educational information for patients.
- Develop improved QI tracking tool to monitor compliance.
- Involve Nursing Shared Governance Quality Council in ongoing audits to reinforce completion of all required documentation before starting inductions.
- Present outcome data to nurses and physicians; acknowledge magnitude of efforts and success with change process.
- Expand the project to other hospitals; develop and offer a professional educational package for Level I & II Outreach Hospitals in the community who contract for maternal transport services with Pomona Valley Hospital Medical Center. The initial offering will be “How to eliminate elective deliveries before 39 weeks.”

For more Information about the Pomona Valley Hospital project or the MMMLIEP collaborative contact:

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TALLAHASSEE MEMORIAL HOSPITAL

Tallahassee, Florida

Case Study: Reducing non-medically indicated (elective) deliveries prior to 39 weeks gestation

Background

Tallahassee Memorial Hospital (TMH), a private not-for-profit community teaching hospital, has an average of 4,000 deliveries and 600-700 Neonatal Intensive Care Unit (NICU) admissions each year. In 2006, a Neonatologist voiced concern about the increasing number of infants admitted to the NICU at 36-38 weeks gestation. The Women and Children's Service Line administrator noted a corresponding increase in inductions, failed inductions and cesarean sections. The Tallahassee Memorial Hospital Performance Improvement (PI) team established an Obstetric (OB) Performance Improvement (PI) team in May 2006 to address these clinical concerns.

To reduce non-medically indicated (elective) deliveries prior to 39 weeks, the OB PI team changed the policy around inductions and began educating physicians, certified nurse midwives (CNMs) and nurses about the increase in rates of inductions and NICU admissions. The OB PI team convened the OB Task Force, PI and department meetings to engage staff in discussion and actively involve them in developing new procedures and forms to improve safety and outcomes. With feedback from the collaborative meetings, the OB PI team rewrote hospital policy to include an induction/augmentation bundle criteria that outlined processes to reduce non-medically indicated (elective) deliveries before 39 weeks gestation (see Policy Change Section below). In order to induce labor electively at <39 weeks, a clinician needs both approval by an OB/GYN chairperson and L & D nurse manager. The benefits of these requirements were policy enforcement by the Chairperson instead of by the nursing and scheduling staff, and patient education about risks of inductions prior to 39 weeks gestation during the process of informed consent.

After initial meetings and document changes, the OB PI team continued presentations to educate physicians, CNMs and their office managers about increases in inductions and NICU admissions. Their presentations outlined the changes to both the policy itself and to associated documents, including preprinted order sets and patient informed consent forms. Over the course of two years, the team held bi-monthly, 30-minute meetings for ongoing discussion. The team continued

education and engagement with posters, bulletin boards and newsletters to maintain ongoing communication about change.

Key Steps

- Identify specific problem, create relevant change plan, set measurable goals
- Create multiple, ongoing forums for discussion and education; communicate reasons and methods for change in clear, precise language
- Convene collaborative interdisciplinary teams that include clinicians and administration
- Join external Quality Improvement initiatives (e.g., the Institute for Healthcare Improvement (IHI) Perinatal Improvement Initiative provided tools for our efforts)
- Implement “small tests of change” (e.g., start bundle criteria with one doctor; spread change to all physician groups.)

Barriers and Solutions

Barrier: Physicians and midwives were opposed to documenting Bishop Scores and estimated fetal weight (EFW).

Solutions:

1. **Involve Leaders:** Physician “champions” and the OB Department Chair supported the change and gave clinicians “friendly reminders” to document these measures. If providers remained non-compliant, the OB Department Chair sent a formal letter, which provided encouragement, ongoing education and policy reinforcement.
2. **Change Documents and Forms:** To ensure on-going compliance with documentation, the OB PI team added a data entry field for the Bishop Score on the preprinted order sets for cervical ripening, induction of labor and labor admission.
3. **Consider Reasonable Compromises:** After discussion and negotiation about clinician resistance to documenting EFW, it was agreed that infants would be assessed for weight categories: Small for Gestational Age (SGA), Average for Gestational Age (AGA), or Large for Gestational Age (LGA). Data entry fields were added to the form for the EFW estimation categories.
4. **Reward Teamwork, Foster Morale:** Leaders recognized and acknowledged that data collection was “labor intensive” and required additional time and staff resources. They overcame this barrier by scheduling “chart audit lunches” during which nursing staff, Clinical Nurse Specialist (CNS), and the PI advisor retrieved chart data.

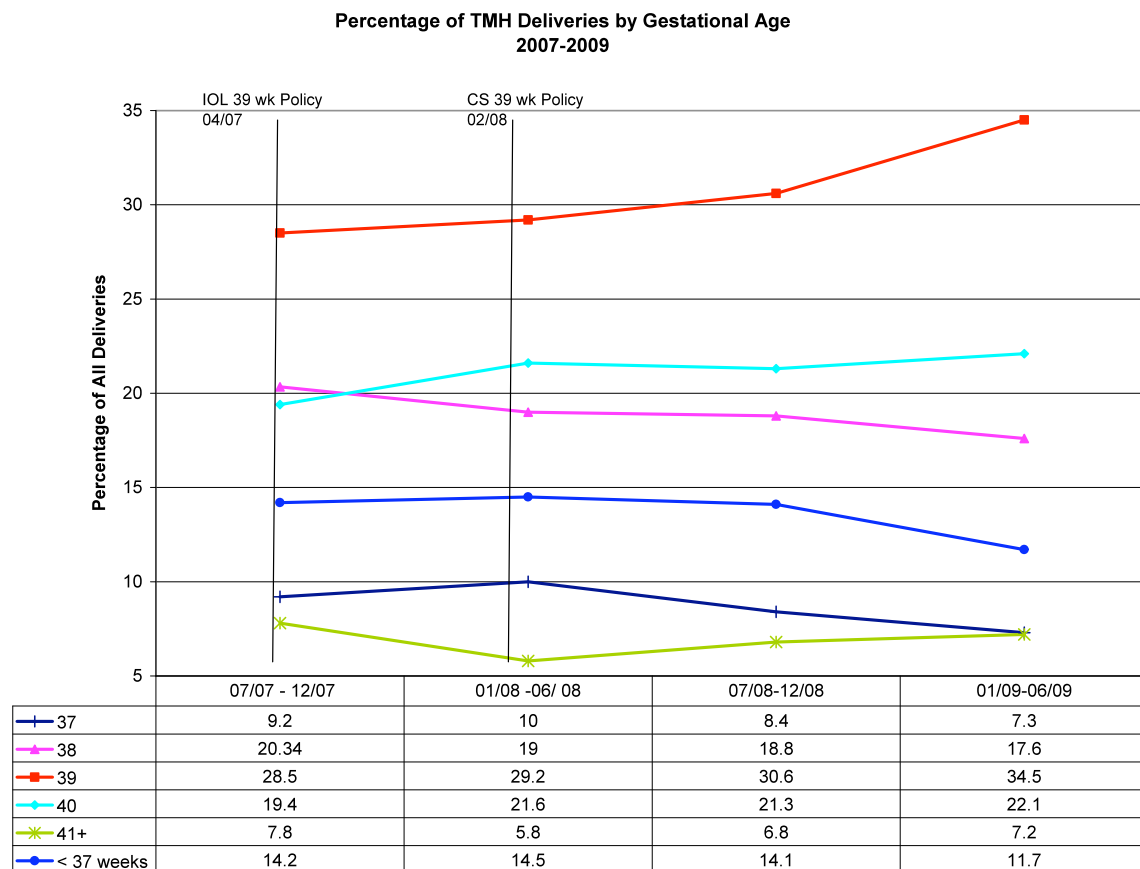
Outcomes

After two years of participating in the Perinatal IHI initiative, the failed induction rate at TMH decreased from 22.6% to 15.6% and the primary c-section rate decreased from 21.5% to 17.5%.

Additional successes included:

- Implementation of a scheduling policy whereby no elective inductions or cesarean sections can be scheduled before 39 weeks
- Informed consent process for all patients undergoing induction
- Mandatory nurse education that improved competency for identification of non-reassuring FHR pattern and management of tachysystole (hyperstimulation)

Figure 17: Percentage of Tallahassee Memorial Hospital Deliveries by Gestation Age



(Permission to use is granted.)

Policy Change: Induction and Augmentation Bundle Criteria

1. Administration of oxytocin for elective labor induction can begin only after the following criteria are documented:
 - a. Gestational age is greater than 39 weeks, 0 days
 - b. Reassuring Fetal Heart Rate pattern (FHR) (Category I)
 - c. Cervical assessment (Bishop Score)
2. Administration of oxytocin for labor augmentation can begin only after the following criteria are documented:
 - a. Estimated Fetal Weight (EFW)
 - b. reassuring FHR (category I or category II)
 - c. cervical assessment (Bishop Score)

Clinicians: be prepared to identify and manage tachysystole during labor.

Lessons Learned

- Identify key staff and clinicians to act as ‘Performance Improvement Champions’.
- Keep team meetings frequent, short, and focused.
- Develop and implement a policy on induction of labor that sets clear guidelines and improves compliance among physician and midwife.
- Communicate with physicians, midwives, nurses and staff frequently using multiple methods: posters, bulletin boards newsletters and regular meetings.
- Maintain consistent data monitoring and focus on “ownership” of data collecting, analysis and reporting by CNS, PI advisor and other OB PI team members.

Future Plans

In May 2009, it was determined that the successes achieved in reducing inductions and NICU rates warranted continued, but less costly, monitoring and oversight. As a result, the OB PI initiative merged with the OB Task Force Committee (an OB Department subcommittee) and participation in the Institute for Healthcare Improvement collaborative was discontinued. The OB Task Force Committee continues to meet on a regular basis and includes representatives from each physician group. OB PI initiatives are consistently on the agenda for each meeting.

During the last quarter of 2009 the “failed induction rate” began to climb. More intensive data collection was re-instituted to track compliance to the induction policies. Labor and Delivery Quality council members and the CNS began to perform the data collection and analysis for this issue. The TMH nursing department continues to implement the “Shared Governance” model, which encompasses nursing councils for each unit related to Practice, Quality, Education and

Evidence Based Practice/Research Advancement and assesses current practices in order to develop quality improvement projects that follow our shared mission for achieving “World Class” medical care.

For more information about the Tallahassee project contact:

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Appendix C – QI Implementation Tools

Form 6: MAP-IT Worksheet

MAP-IT WORKSHEET

Change Project MAP-IT Worksheet

MAP-IT Action Plan for: _____ (Hospital Name)

Date Created: _____ Developed by: _____

Aims Statement or Objective: *By (month)____ (day)____ (year)____ no infants less than 39 weeks will be electively delivered.*

M: Mobilize

A: Assess

P: Plan

I: Implement

T: Track

First Cycle Due Date: _____

Guidry, M., Vischi, T., Han, R., & Passons, O. *Healthy people in healthy communities: A community planning guide using Healthy People 2010*. Washington, D.C.: U.S. Department of Health and Human Services. The Office of Disease Prevention and Health Promotion.

<http://www.healthypeople.gov/Publications/HealthyCommunities2001/default.htm>.

FISHBONE CAUSE and EFFECT DIAGRAM

Fishbone Diagram:

A fishbone diagram may help leaders identify the effect of various components have on a problem. This analysis can support leaders' efforts to develop their implementation plan.

Figure 18: Blank Ishikawa “Fishbone” Diagram

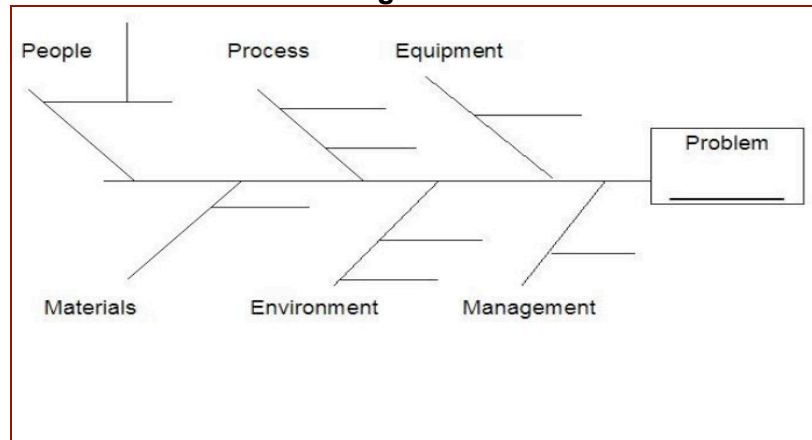
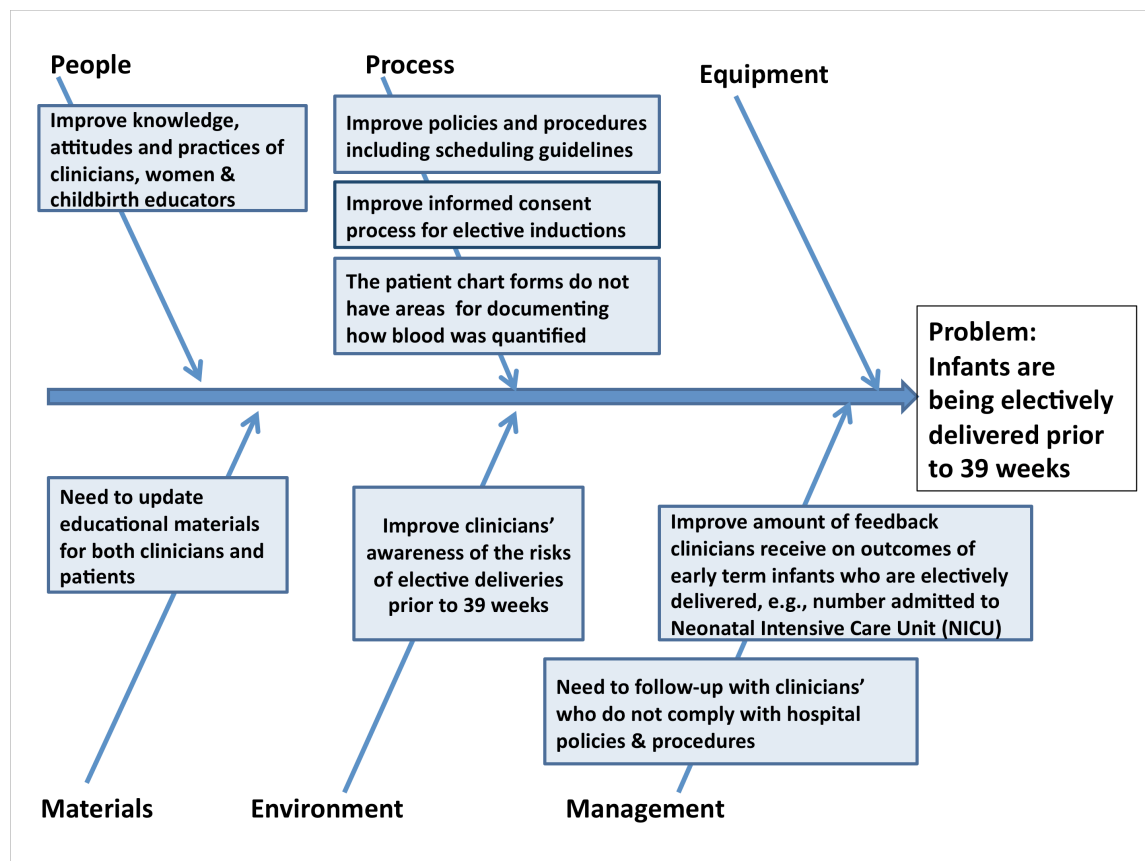


Figure 19: EXAMPLE of a Completed Ishikawa “Fishbone” Diagram

Note: Components of the diagram will vary at individual hospital.

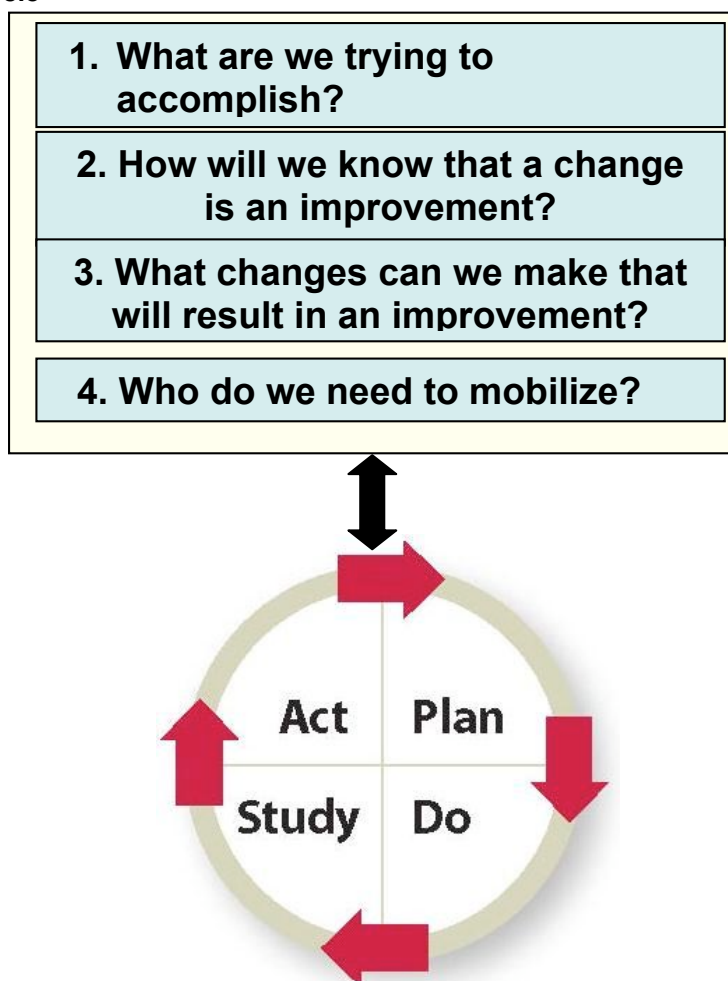


PLAN-DO-STUDY-ACT (PDSA) METHOD

Background: A commonly used implementation and evaluation method is the PDSA cycle, which has been the foundation for many collaborative quality improvement (CQI) programs.^(2,3) The PDSA cycle is effective in real world settings and applicable to data collection on a wide range of conditions. Additionally, it is reliable for implementing and testing on a small scale, which is critical in settings where failure is risky. Hospital QI department leaders can help identify the preferred method for use in your setting; other structured improvement approaches, such as Six Sigma's Define – Measure – Analyze – Improve – Control (DMAIC) have been shown to be equally or possibly more effective.^{58,}

Regardless of the QI methodology, the key initial step is to identify specific elements that hinder or foster high quality of care. Four fundamental questions need to be addressed when developing a CQI program:

Figure 20: PDSA Cycle



Answer the questions in any order, but realize that every process for change is iterative; we rarely get it right the first time around. Be observant; make modifications as you go, reintroduce plans and actions, then observe again. “That’s the way we do things around here” can be a common response to a problem, but it seldom succeeds.

Systematic Approach for Leaders: By approaching problems systematically, everyone works smarter, not just harder. One benefit of the systematic approach includes collecting meaningful data that outlines outcomes, processes and structures that are in need of evaluation and manipulation. As a result, leaders and teams develop strategies and tactics that are evidence-driven, and they can effectively identify and mitigate barriers, test systems and modify implementation for another cycle of change toward improvement.

Improvement cycles should be repeated as many times as needed in order to gather sufficient data to indicate signs of improvement. In general, affecting change involves creative thinking. Specific activities include:

- Evaluate the purpose.
- Visualize the ideal.
- Remove “the current way of doing things” as an option.
- Challenge the boundaries.
- Embed improvements (making it easier to make the right choice for patients).
- Influence the culture.
- Look for ways to smooth the flow of activities.

Small tests of change help leaders and teams see that their efforts are moving toward improvement. At each small test-of-change cycle, data collection and analysis is designed to inform leaders and teams about process and patient outcome measures. Charts, flow charts, Pareto charts, and formal Failure Modes and Effects Analysis (FMEA) show results to leaders and teams about the direction of change.⁶⁰ Results in QI may not be immediately apparent when patient outcomes are used as a measure, because they are usually slower to change. Therefore, the first months of QI projects typically focus of process measures.

Table 12: PDSA Summary	
Plan	<ul style="list-style-type: none">• State the objectives of the cycle.• Make predictions about what will happen next and why.• Develop a plan to carry out the changes: Who? What? Where? What data needs to be collected?
Do	<ul style="list-style-type: none">• Introduce the change(s).• Collect data.• Document problems and unexpected observations.• Begin analysis of the data.
Study	<ul style="list-style-type: none">• Complete the analysis of the data.• Summarize what was learned.
Act	<ul style="list-style-type: none">• What modifications should be made?• What will happen in the next cycle?

APPLYING THE PDSA CYCLE TO ELECTIVE DELIVERIES <39 WEEKS

The PDSA process for CQI can be applied when implementing a plan to reduce or eliminate elective deliveries <39 weeks. Below are action items and details to address during this process.

PLAN

Action Items	Details
Convene multidisciplinary QI team of key stakeholders.	Key stakeholders may include: <ul style="list-style-type: none"> Physicians/Nurses/Clerical staff Risk/Quality management
Determine outcome measure(s) and data collection process.	<ul style="list-style-type: none"> NICU admissions for babies delivered <39 weeks Morbidities measures: neonatal and maternal Electronic records, chart reviews, logs Ongoing monitoring and evaluation of morbidities associated with <39 week deliveries
Determine process measure(s) and data collection process.	<ul style="list-style-type: none"> Scheduling process, including documentation to identify gestational age, indication for elective delivery Process of oversight, guidelines enforcement and communication chain that prohibit elective deliveries <39 weeks
Align scheduling process with process to identify whether elective deliveries are appropriate and can be scheduled.	<ul style="list-style-type: none"> Step 1: Check that gestational age and medical indication are documented in scheduling form. Step 2: If criteria are missing or do not match specific guidelines (outlined in a checklist, for example), first level of communication is triggered (e.g. call to OB provider to request information). Step 3: Additional chains of communication are triggered so that scheduling criteria are met and resolved.
Develop or adopt scheduling form(s).	Identify who fills out forms and who reviews forms for required elements for scheduling.
Aim for consensus on key concepts.	<ul style="list-style-type: none"> What is the appeal process for cases not covered by the guidelines? Outline consequences if a provider refuses to follow the guidelines.
Develop departmental policy.	Policy reflects scheduling, documentation, oversight and enforcement processes to reduce or eliminate elective inductions and cesarean sections prior to 39 weeks gestation that are not medically indicated
Collect baseline outcome and process measure data to identify areas in need of attention; collecting data before implementation allows specific analysis of change after implementation.	<ul style="list-style-type: none"> Conduct chart reviews of scheduled inductions and cesarean deliveries for a minimum of 2 months prior to implementation. Assess the level of understanding of the issues by providers and patients Assess barriers to change
Conduct educational presentations and grand rounds for key stakeholders.	<ul style="list-style-type: none"> Neonatal risks of early term birth Successful QI projects that reduced elective early term births
Develop a plan and timeline for implementation.	First implementation plan runs for 1-2 months; first evaluation (Study) is completed within 1-2 months.

DO

Action Items	Details
Communicate new department policy.	Identify point persons to communicate policy with each group; e.g. department chair, QI committee chair or MD project lead communicates with OB providers; nursing director communicates with nursing staff.
Implement use of new processes and forms for a predetermined pilot period of time.	Implement new processes and forms for 1-2 months; evaluate within 1-2 month time period.

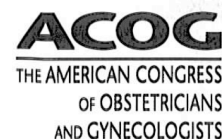
STUDY

Action Item	Details
After predetermined pilot period, review and assess effectiveness of policy and forms implementation; analyze impact on obstetrical service, process and patient outcomes.	Depending on the intent and resources of the department, this action item can be conducted as in-depth analysis or a less intensive overview of trends of process and outcome measures including: <ul style="list-style-type: none"> • Review of elective procedures • Indications • Neonatal outcomes

ACT

Action Items	Details
Reconvene QI team to identify additional changes to continue improvement process.	<ul style="list-style-type: none"> • Edit scheduling forms and guidelines. • Clarify implementation plan. • Provide additional guidance to providers about department policy, scheduling and documentation requirements.
Inform staff of changes	Process measures may require additional change over time; process measures can change during the implementation process; however outcome measures remain more constant.
Obtain ongoing feedback on strengths and areas for improvement.	Feedback reminds everyone about the importance of the project, fosters teamwork and gives everyone a voice. Providing feedback can be as simple as posting monthly data in prominent spots in L&D; data can include process and outcome measures, i.e. number of elective births and number of NICU admissions in that population.

Appendix D – Letters of Support



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June 23, 2010

On behalf of the American Congress of Obstetricians and Gynecologists, District II, We congratulate the March of Dimes (MOD), the California Maternal Quality Care Collaborative (CMQCC), and the California Maternal, Child and Adolescent Health Division, for the development of the *California Quality Improvement Toolkit*. The goal of the toolkit is to eliminate non-medically indicated deliveries prior to 39 weeks gestation. We support the use of this important resource to improve the health and safety of our patients.

This toolkit is an excellent example of an effective “how-to guide” for physicians and other healthcare providers. However, if a hospital or physician practice already has the means to implement such a program, this toolkit will confirm the approaches already being used. For those needing assistance, this toolkit provides the initiative and insight to develop a quality program.

District II is committed to enhancing patient safety, improving outcomes and reducing liability risk for ob-gyns in New York. The *California Quality Improvement Toolkit* provides a mechanism to achieve this. ACOG District II hopes to partner with the New York State Department of Health to educate healthcare providers and distribute the toolkit statewide.

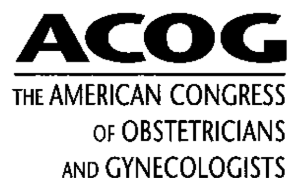
Sincerely,

Scott D. Hayworth, MD, FACOG
Chair, ACOG District II

Richard L. Berkowitz, MD, FACOG
Co-Chair, ACOG District II Patient Safety Committee

James Woods, MD, FACOG
Co-Chair, ACOG District II Patient Safety Committee

ILLINOIS SECTION
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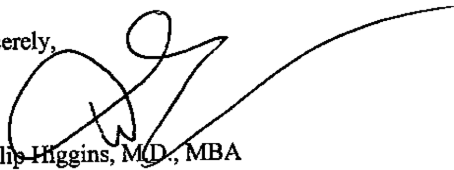
July 14, 2010

On behalf of the Illinois Section (District VI) of the American Congress of Obstetricians and Gynecologists (ACOG), I applaud the March of Dimes (MOD), the California Maternal Quality Care Collaborative (CMQCC), and the California Maternal, Child and Adolescent Health Division, Center for Family Health, California Department of Public Health (CMCAHD-CDPH) for the development of the Toolkit entitled, "Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age". We support the use of this Toolkit as a valuable resource to improve the health and safety of mothers and babies.

In our ongoing effort to reduce perinatal morbidity, ACOG has advocated against elective deliveries prior to 39 weeks gestational age for many years. The Toolkit which is based on established ACOG guidelines, includes: (1) a cogent rationale for eliminating purely elective deliveries prior to 39 weeks, including the importance of accurate dating of gestational age, (2) a user-friendly guide that both supports best practices and provides a template for hospitals and providers to assist them in implementing changes in policy and practice, (3) tools for data collection and analysis, and (4) educational materials for implementation, from FAQ sheets to a Power Point presentation for educating staff.

As the premier organization dedicated to the well-being of women, ACOG understands that the Toolkit engenders a process that enhances safety, improves quality of care, and maximizes healthy outcomes for mothers and babies. We are pleased that this valuable resource is going to be implemented in our own state of Illinois, and that together, we can improve perinatal outcomes. Again, we commend the March of Dimes, CMQCC, and the CMCAHD-CHPH for this effort.

Sincerely,



Phillip Higgins, MD., MBA



The American Congress of Obstetricians and Gynecologists

District IX California

April 15, 2010

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EXECUTIVE DIRECTOR

Margaret Merritt

On behalf of the American Congress of Obstetricians and Gynecologists, District IX, I want to applaud you on the production of the **CALIFORNIA QUALITY IMPROVEMENT TOOLKIT: Elimination of Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age**. The District IX Advisory Council strongly supports the use of this important resource and believes that following these recommendations will improve the health and safety of our patients.

Since 1979, ACOG has advised against *elective* deliveries before 39 weeks gestation. As the executive summary so aptly points out, this toolkit does not define the standard of care in California, but rather advises users to adapt these guidelines and this toolkit based on their local facility level of care and patient population. The toolkit is based on ACOG Guidelines, and develops the case for implementation with four separate and important sections. First, it eloquently makes a case for deliveries after 39 weeks to improve the health of our infants and children. There is a need for effective pregnancy dating and appropriate timing of delivery. Second, the toolkit is a how-to implementation guide. If a hospital or a physician practice already has the means to implement such a program this toolkit will confirm the approaches already being used. For those facilities needing assistance, this toolkit provides the initiative and insight into developing a quality program. The third section provides suggestions on data analysis. And finally, the fourth section provides the educational tools for implementation, from FAQ sheets to a Power Point presentation for educating the hospital staff.

It is important to understand that we are recommending a process to enhance safety, to improve quality, and to increase healthy outcomes. This toolkit does NOT confuse the at times necessary role of early delivery for maternal or neonatal indications. It is important for clinicians to document the indication for admission or delivery in all patients. This toolkit will help in all regards. We commend March of Dimes, the California Maternal Quality Care Collaborative and the California Department of Public Health.

Sincerely,

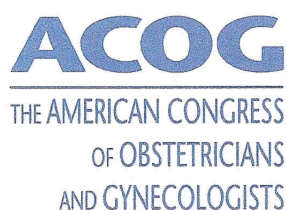
Hal C. Lawrence, III, MD, FACOG
Vice President, ACOG Practice Activities Division

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Women's Health Care Physicians
Education • Advocacy • Practice • Research



THE AMERICAN CONGRESS OF OBSTETRICIANS AND GYNECOLOGISTS
FLORIDA SECTION

Jay Trabin, MD
560 Village Boulevard Suite 300
West Palm Beach, FL 33409

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June 15, 2010

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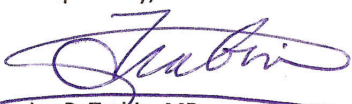
PAST-CHAIR
Ed Carney, MD

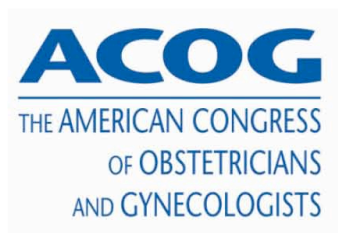
On behalf of the Florida Section of the American Congress of Obstetricians and Gynecologists (ACOG), I congratulate the March of Dimes (MOD), the California Maternal Quality Care Collaborative (CMQCC), and the California Maternal, Child and Adolescent Health Division; California Department of Public Health (CMCAHD-CDPH) for the development of the *California Quality Improvement Toolkit* with its goal to eliminate non-medically indicated deliveries prior to completion of 39 weeks gestation. We are delighted that this valuable resource is being considered for implementation in our own State.

As you know, in its ongoing effort to reduce perinatal morbidity, ACOG for many years has advocated against elective deliveries prior to 39 weeks. The *Toolkit* has produced very encouraging results and we believe that we can similarly reduce perinatal adverse outcomes by implementing that program in Florida. It is especially noteworthy that the *Toolkit*, which is based on established ACOG guidelines, neither defines the standards for the State nor does it impose punitive measures. What it does accomplish includes: (1) It explains the cogent rationale for purely elective deliveries only after 39 weeks and encourages the practice of accurate gestational age dating; (2) It serves to support and reinforce correct approaches already undertaken by some physicians and hospitals, and provides a practical template for implementation of those approaches by others; (3) It provides guidelines for data collection and analysis; and (4) It even offers useful FAQ sheets and a Power Point presentation for educating hospital personnel.

As the premier organization dedicated to the well-being of women, ACOG understands that the *Toolkit* engenders a process that enhances safety, improves quality, and maximizes healthy outcomes. This program will be useful in many capacities, from encouraging documentation of gestational age on hospital admission, to the collection and dissemination of outcome data. Again, we applaud the MOD, CMQCC, and CMCAHD-CDPH in their efforts to improve perinatal outcomes and appreciate the opportunity to apply this in Florida.

Respectfully,


Jay R. Trabin, MD



ACOG DISTRICT XI

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Odessa, TX 79763
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April 26, 2010

On behalf of the American Congress of Obstetricians and Gynecologists, District XI, I want to offer our support for the March of Dimes, "CALIFORNIA QUALITY IMPROVEMENT TOOLKIT: Elimination of Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age."

We commend the March of Dimes, the California Maternal Quality Care Collaborative, and the California Department of Public Health for their leadership in producing this toolkit. ACOG has advised against **elective** deliveries before 39 weeks gestation for many years, and this toolkit is based on ACOG Guidelines.

This toolkit provides with guidelines based on local level of care and patient populations. It emphasized the need for effective pregnancy dating and appropriate timing of delivery. This toolkit is a how-to guide for hospitals or physicians to provide the initiative and insight into developing a quality program at the local level. It also provides suggestions for data analysis and educational materials for hospital staff.

District XI is committed to providing safety, quality and increased healthy outcomes for our patients. This toolkit provides a mechanism to achieve this, without confusing the necessary role of early delivery for maternal or neonatal indications. ACOG District XI is partnering with the Texas Chapter of the March of Dimes to educate healthcare providers and distribute the toolkit.

Sincerely,

A handwritten signature in black ink that reads "John C. Jennings, M.D." The signature is written in a cursive, flowing style.

John C. Jennings, MD
Chair
District XI ACOG



May 11, 2010

Dear Healthcare Provider,

The Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) California Section elected officers were asked to review the toolkit titled "A California Toolkit to Transform Maternity Care: Eliminating Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age". This toolkit was a collaborative project developed by the California Maternal Quality Care Collaborative, March of Dimes, and the California Department of Public Health: Maternal Child and Adolescent Health Division.

We have reviewed the contents of the toolkit and feel this will serve as an important resource for healthcare providers and for hospitals. It will help to reduce and/or eliminate neonatal morbidities, such as respiratory complications, sepsis, and hypoglycemia.

On behalf of the AWHONN California Section, we are pleased to submit our letter of support for this toolkit.

Barbara Jewell
Barbara Tewell, RNC-OB, MSN
President
AWHONN
California Section

Kristi Gabel
Kristi Gabel, RNC-OB, MSN, CNS
Secretary/Treasurer
AWHONN
California Section



Promoting the health of women and newborns.

May 26, 2010

California Maternal Quality Care Collaborative (CMQCC)
Medical School Office Building
251 Campus Drive, MS 5415
Stanford, CA 94305

To Whom It May Concern:

On behalf of the 23,000 members of the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) and the millions of families they serve, I applaud the production of, "A California Toolkit to Transform Maternity Care: Eliminating Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age" and "Obstetric Hemorrhage Toolkit: Obstetric Hemorrhage Care Guidelines and Compendium of Best Practices." AWHONN and its California Section support the use of these resources to advance the health of women and newborns.

AWHONN supports the American Congress of Obstetricians and Gynecologists (ACOG) recommendations that advise against non-medically indicated deliveries prior to 39 weeks completed gestation. Further, because of AWHONN's extensive research related to late preterm infants, it is clear that these babies are at risk for a host of potentially serious health problems. There is a growing need for effective pregnancy dating and appropriate timing of delivery. Health care providers and their patients must be made aware of the evidence that spontaneous labor is associated with fewer complications than induced labor, and that there are risks to the infant when born just a few weeks early.


AWHONN also supports the mission of CMQCC to eliminate preventable maternal mortality and morbidity and to eliminate racial and ethnic disparities. As such, the "Obstetric Hemorrhage Toolkit," will provide an equally important contribution to improving care in the state of California.

We commend CMQCC, the March of Dimes, the California Department of Health, the California Perinatal Quality Care Collaborative, and Stanford University on these collaborations that are making comprehensive and standardized resources available to obstetric care providers.

Sincerely,

Karen Peddicord, RNC, PhD
Chief Executive Officer

Appendix E – Clinician Slide Presentation



**Elimination of
Non-medically Indicated (Elective)
Deliveries Before 39 Weeks
Gestational Age**

A Quality Improvement Toolkit

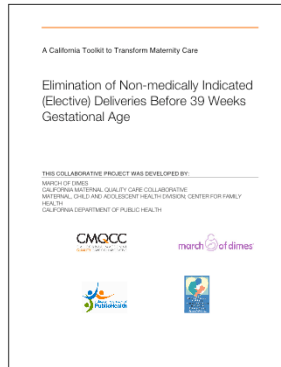
Funding for the development of this toolkit was provided by:
Federal Title V block grant Funding from the California Department of Public Health; Maternal , Child and Adolescent Health Division was used by the California Maternal Quality Cre Collaborative to develop the toolkit; and March of Dimes.

©CDPH 1

Slide Set #1

This first slide set presentation was developed to educate clinicians about the growing problem of elective deliveries and how to address the issue within the hospital. This presentation is intended for Grand Rounds or flip chart on L&D.

Elimination of Non-medically Indicated (Elective) Deliveries Prior to 39 Weeks



Acknowledgements

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Leslie Kowalewski

Author Organizations:

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California Pacific Medical Center
Loma Linda University School of Medicine
Catholic Healthcare West
California Perinatal Quality Care Collaborative (CPQCC)
March of Dimes

Additional Reviewers:

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 Jennifer Baptiste-Smith, MPH; San Bernardino Public Health Department (San Bernardino)
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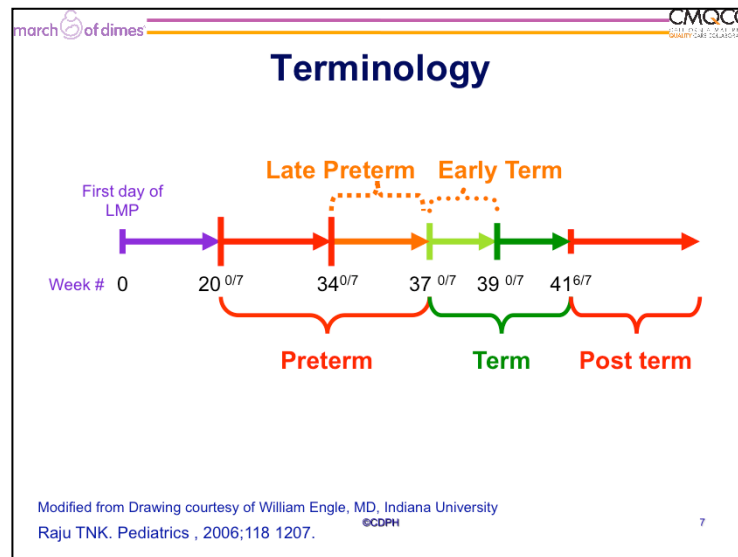
Also a BIG Thank You to all the March of Dimes Big 5 State Reviewers ⁴

Letters of Support Obtained (Others Pending)

- American Congress of Obstetricians and Gynecologists (ACOG)
 - District IX
 - Other District letters of support in progress
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
 - California
 - National

Objectives

- 1) Describe the increase in non-medically indicated (elective) deliveries before 39 weeks and identify the contributing factors.
- 2) Discuss the risks of early term deliveries and the benefits of delaying delivery beyond 39 weeks gestation.
- 3) Outline successful initiatives to reduce elective deliveries before 39 weeks at hospital, health system and statewide levels.
- 4) Describe a sample implementation plan for the prevention of elective deliveries before 39 weeks.



It is understood that prematurity poses significant risks to the neonate. And it is understood that the risks of neonatal morbidity from prematurity are inversely related to advancing gestational age. Due to the tremendous advances in neonatal care, many of us have become complacent about the risks to babies of delivering beyond 34 weeks. It is becoming increasingly clear that there is not only a risk to babies born in the late preterm period (between 34-37 weeks) but there is an increased risk for babies born in the early term period, defined as deliveries taking place between 37 weeks and 0 days and 38 weeks and 6 days.

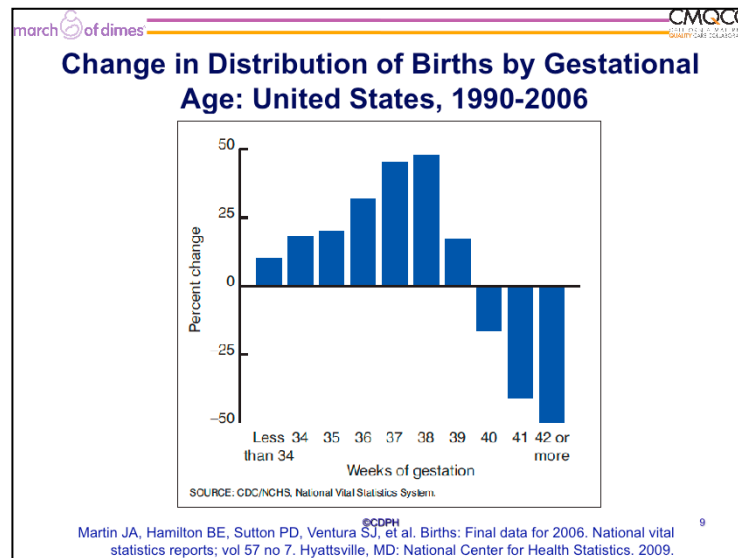
March of Dimes

CMQCC

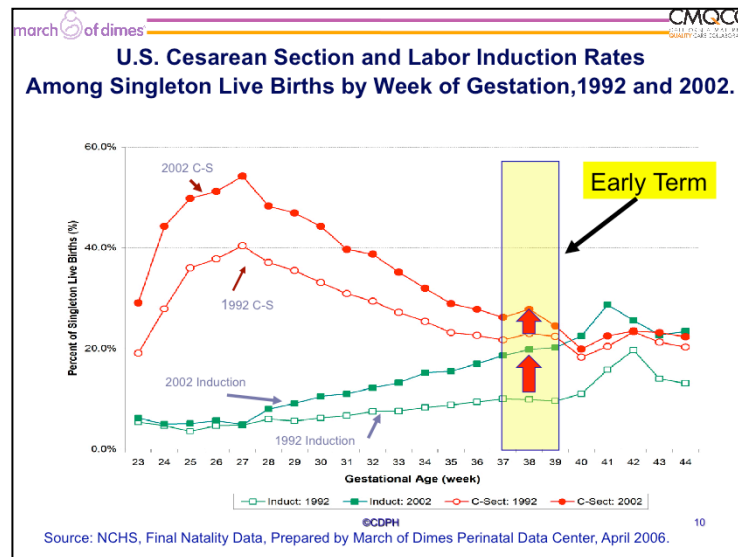
Inductions of Labor

- Since 1979, ACOG has cautioned against inductions before 39 weeks in the absence of a medical indication.
- Confirmation of gestational age is **CRITICAL:**
 - Ultrasound before 20 weeks gestation to establish accurate gestational age of the fetus
 - Documentation of fetal heart tones by 30 weeks using Doppler ultrasonography
 - Confirmation that it has been 36 weeks since a positive pregnancy test was obtained

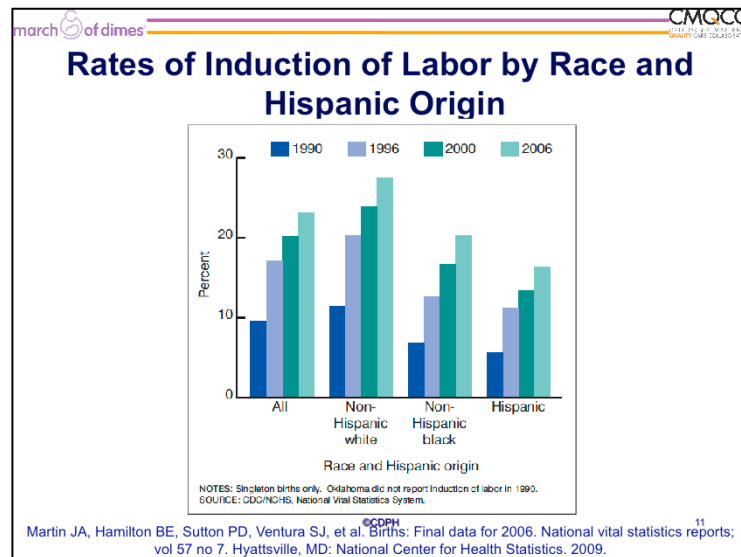
Since 1979, the American Congress of Obstetricians & Gynecologists (ACOG) has cautioned against inducing women before 39 weeks unless there is a medical or obstetrical indication to do so. An obvious issue is to accurately determine gestational age. Fortunately, ACOG has given us some guidance on this issue in their publication on induction of labor. (Read the bullets on confirmation of gestational age).





This slide illustrates the changing distribution of births to a lower gestational age over a 16 year period. As you can see, there is a sharp decline in deliveries occurring after 39 weeks with a concomitant sharp increase in births occurring particularly between 36-38 weeks gestation.



This graph illustrates a significant increase in both induction of labor and cesarean deliveries in 2002 compared to 1992. The largest increase in induction of labor seems to occur in the early term and term period and although the cesarean section increase is fairly constant and begins to narrow at around 34-35 weeks, a significant difference only disappears after 39 weeks.



The increased rates of induction have been similar across all racial groups, with the highest increase in non-Hispanic whites.

March of Dimes  CMQCC 

**Why are non-medically
indicated (elective/planned)
deliveries increasing in
frequency?**

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Let's take a look at some of the reasons that elective deliveries are increasing.

March of Dimes

CMQCC

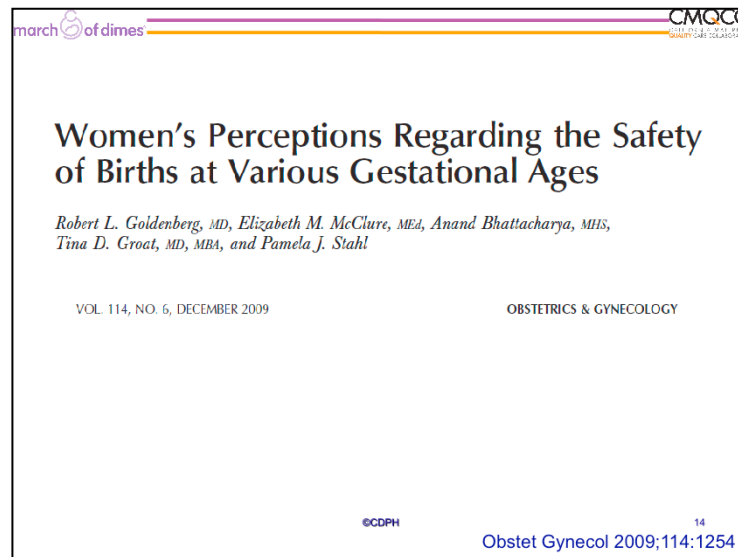
Elective Induction: Sounds like a good idea...

- Advanced planning
- Mother Lives far away; history of quick labors
- Delivered by her doctor
- Maternal intolerance to late pregnancy
 - Excess edema, backache, indigestion, insomnia
- Prior bad pregnancy
- And, it's okay right?

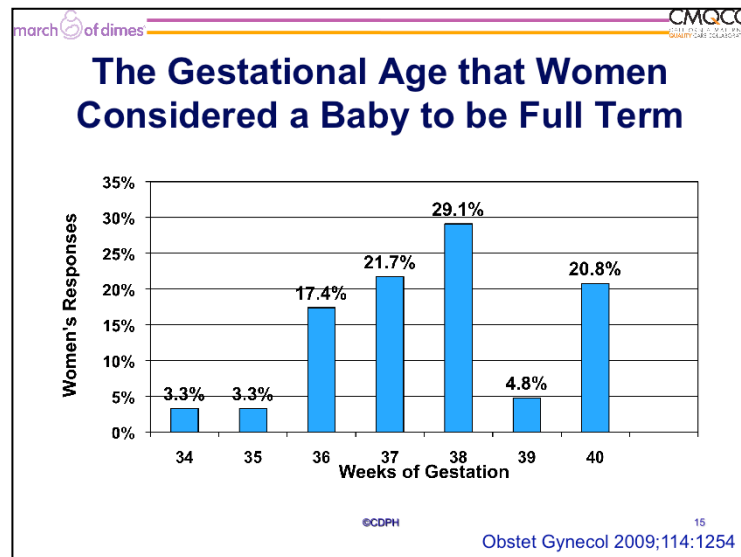
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13
Clin Obstet Gynecol 2006;49:698-704

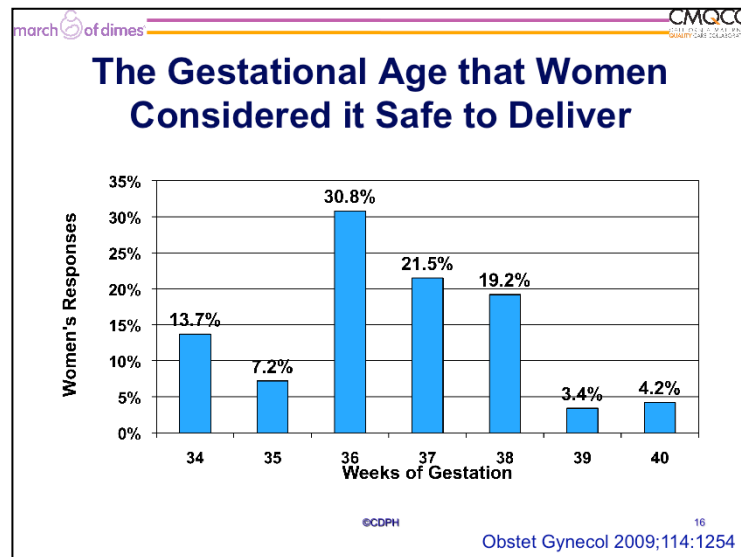
Why have elective deliveries increased? It is not totally clear. Although the physician is the one who controls the act of scheduling, it is not clear what drives that decision. It may very well be impacted by the fact that patients and obstetricians are unaware of any harm. And there are definitely perceived benefits for timing the delivery. So why not plan the delivery around a convenient date for both the obstetrician and the expectant mother and her family?



This study by Goldenberg et al. address the potential impact of the patient on initiating the elective delivery process due to a lack of understanding of the risks of an early delivery. A national sample of 650 insured women was commissioned by a large health care insurance company. The purpose of the study was to understand women's beliefs related to the meaning of full term and the safety of delivery at various gestational ages. The study was anonymous and voluntary and included women who had given birth within the last 18 months; were first time mothers of singleton infants; currently had health insurance coverage either through their employer or spouse's employer; had completed at least some high school education; and delivered their child at a hospital or medical facility. Those who had diabetes, hypertension/preeclampsia, or obesity or had any other medical condition that would put them at high risk for a cesarean delivery were excluded from the study. The online survey was conducted August 16–19, 2008, while the telephone portion of the survey was conducted August 18–29, 2008. 58% were white, 93% were married or partnered, and 77% had a yearly family income of at least \$50,000. Nearly 50% were employed full-time and nearly 69% held a college degree.



When participants were asked “At what gestational age do you believe the baby is considered full term?” Nearly 25% chose 34-36 weeks. Another 50% chose 37-38 weeks and only 25% chose 39-40 weeks.



When women were asked “What is the earliest point in the pregnancy that it is safe to deliver the baby, should there be no other medical complications requiring early delivery?”, more than half of the mothers chose 34-36 weeks. Only 7.6% chose 39-40 weeks.

“Non-Medical” Indications Often Given for Inductions



- Maternal intolerance to late pregnancy
 - Excess edema, backache, indigestion, insomnia
- Prior labor complication
- Prior shoulder dystocia
- Suspected fetal macrosomia
- History of rapid labor/ lives far away
- Possible lower risk for mom or baby
 - Lower stillbirth rate, less macrosomia, less preeclampsia

With an increasing role of patients in the decision-making process it is important for not only the physician, but also the patient to understand what constitutes a safe gestational age for the delivery of their babies.

What Motivates Some Obstetricians to Perform Elective Inductions?

- Physician convenience
 - Guarantee attendance at birth
 - Avoid potential scheduling conflicts
 - Reduce being woken at night
- ... what's the harm?
 - Amnesia due to rare occurrence.
 - The NICU can handle it.
- And...

It is of utmost importance that obstetrical providers time the delivery for a good reason and not simply for our convenience.





Suspected Fetal Macrosomia (Non-Diabetic Population)

- Does not reduce risk of shoulder dystocia
- Doubles risk of cesarean delivery
- 262 pregnancies EFW >90%
- Elective group:
 - 57% cesarean delivery rate
 - 5.3% shoulder dystocia
- Spontaneous labor group:
 - 31% cesarean delivery rate
 - 2.5% shoulder dystocia

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Combs et al: Obstet Gynecol 1993; 81:492-496

Induction for macrosomia needs special attention. This has become perhaps one of the leading issues for a planned early induction of labor. However, numerous studies such as this study by Combs et al. show that induction of labor does not decrease the incidence of shoulder dystocia, nor does it decrease the incidence of cesarean deliveries.

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CHILDREN • WOMEN • FAMILIES
QUALITY CARE • TOGETHER

Risks of Non-medically Indicated (Elective) Delivery Before 39 weeks.

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So let's take a look at the risks of elective deliveries before 39 weeks.

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Complications of Non-medically Indicated (Elective) Deliveries Between 37 and 39 Weeks

- Increased NICU admissions
- Increased transient tachypnea of the newborn (TTN)
- Increased respiratory distress syndrome (RDS)
- Increased ventilator support
- Increased suspected or proven sepsis
- Increased newborn feeding problems and other transition issues

See Toolkit for more data and full list of citations
Clark 2009, Madar 1999, Morrison 1995, Sutton 2001, Hook 1997

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There is nearly a doubling of the risks for admissions to the neonatal intensive care unit, an increase in respiratory complications and other complications as shown here for every week below 39 weeks.


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Morbidity of Late Preterm Infants in Massachusetts

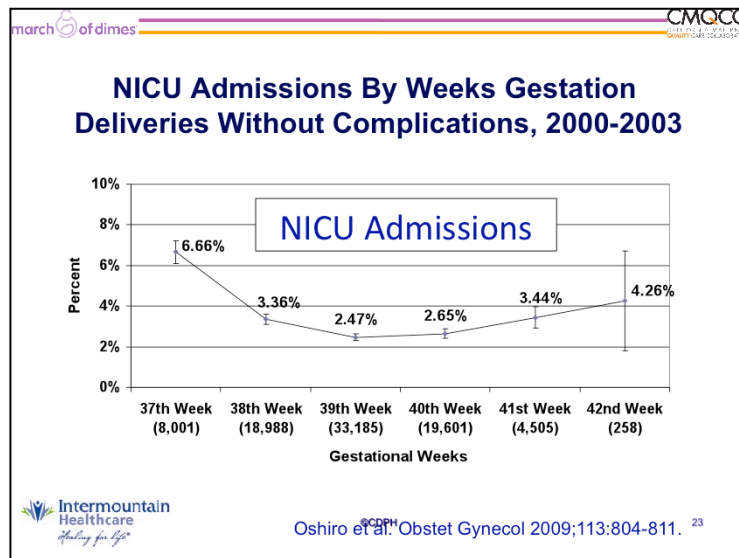
- Late preterm infants : **22.2%** vs Term infants: **3%**
- Sample: Term (377,638), Late Preterm (26,170)
- Morbidity** rates doubled for each gestational week earlier than 38 weeks

40 wks:	2.5%
39 wks:	2.6%
38 wks:	3.3%
37 wks:	5.9%
36 wks:	12.1%
35 wks:	25.6%
34 wks:	51.9%

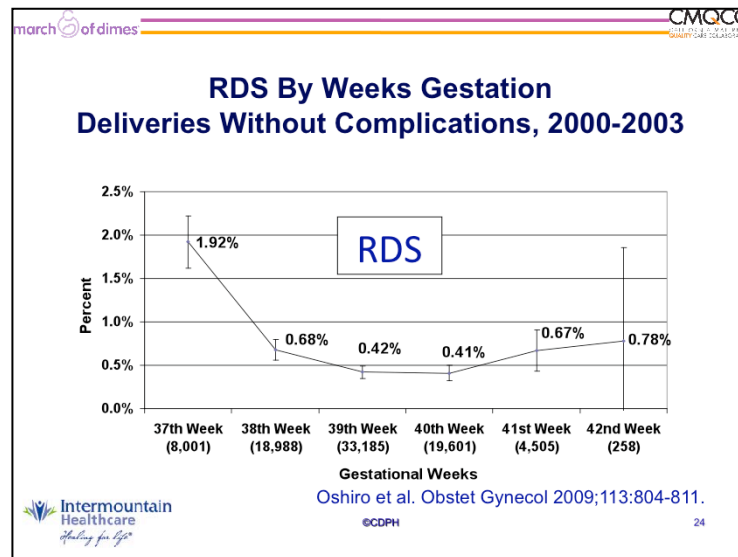


Shapiro-Mendoza CK et al. Effect of late-preterm birth and maternal medical conditions on newborn morbidity risk. *Pediatrics*. 2008;121 :e223 –e232

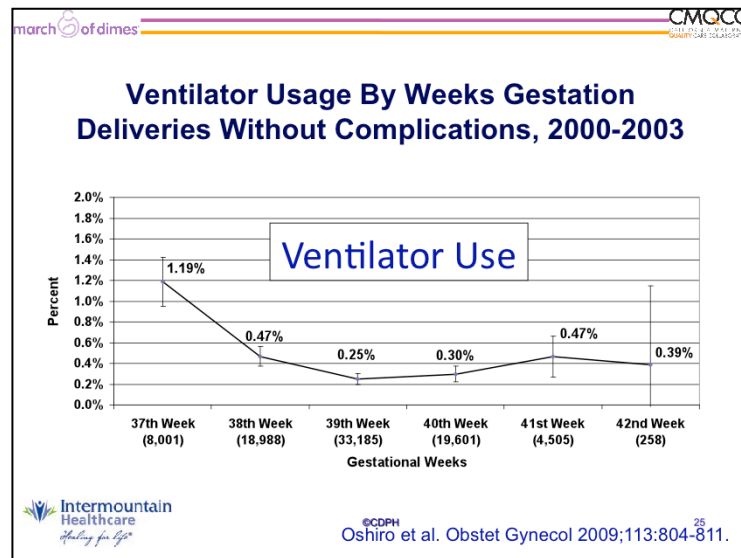
This study looking at infants delivered in Massachusetts, also shows that morbidity increases significantly before 39 weeks and nearly doubles for each gestational week below 39 weeks.



A study by Oshiro et al. looked at elective deliveries in a large integrated healthcare system in Utah and showed increasing risk for NICU admits for each week before 39 weeks.



There was also an increased risk for respiratory distress syndrome for each week before 39 weeks.



And an increase in neonates on ventilators for each week before 39 weeks.

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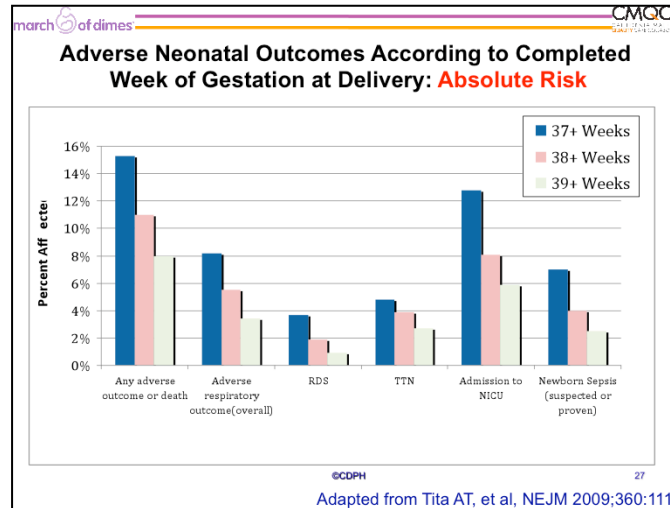
Timing of Elective Repeat Cesarean Delivery at Term and Neonatal Outcomes

- 13,258 elective repeat cesarean births in 19 centers
- 35.8% done <39 weeks gestation
- Increased risk of neonatal morbidity
 - Respiratory, hypoglycemia, sepsis, NICU admissions, hospitalization > 5 days
 - Even among babies delivered at 38-39 weeks

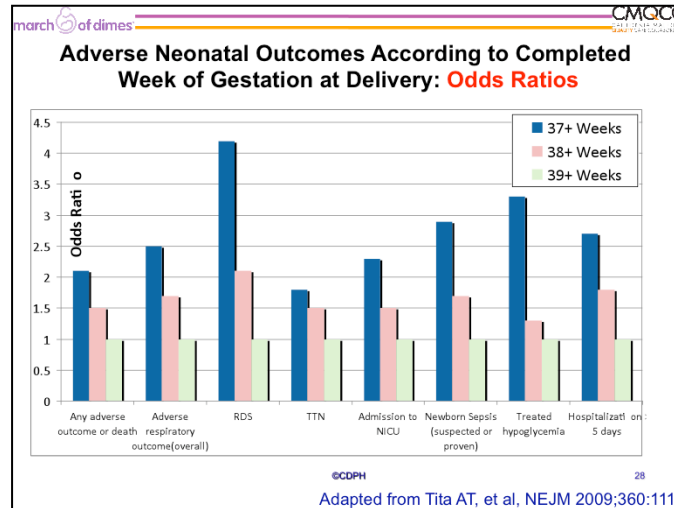
©CDPH

Tita AT, et al, NEJM 2009;360:111

The NICHD Maternal Fetal Medicine Units Network evaluated a large cohort of women with viable singleton pregnancies who underwent elective repeat cesarean sections. More than a third of deliveries were performed before 39 weeks of gestation. As compared with deliveries at or after 39 weeks, deliveries before 39 weeks of gestation - even those during the last 3 days before week 39 - were associated with an increased risk of a composite primary outcome that included neonatal death, respiratory complications, need for mechanical ventilation, treated hypoglycemia, newborn sepsis, and admission to the neonatal intensive care unit.



The actual percent affected for adverse neonatal outcomes according to completed week of gestation at delivery is shown here. Again, it is clear that EARLY term cesarean births before 39 weeks increase neonatal morbidity.





The odds ratios for adverse neonatal outcomes according to completed week of gestation at delivery is shown here. The odds ratios vary from 2 to 4-fold higher for births under 38 weeks and 1.5 to 2.5-fold higher for births in the 38th week.

Timing of Fetal Brain Development

- Cortex volume increases by 50% between 34 and 40 weeks gestation. (Adams Chapman, 2008)
- Brain volume increases at rate of 15 mL/ week between 29 and 41 weeks gestation.
- A 5-fold increase in myelinated white matter occurs between 35-41 wks gestation.
- Frontal lobes are the last to develop, therefore the most vulnerable.

(Huttenloher, 1984; Yakavlev, Lecours, 1967; Schade, 1961; Volpe, 2001). 29

Read the bullets.

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**Examples of Successful Programs to
Reduce Non-medically Indicated
(Elective) Deliveries
Before 39 weeks of Gestation**

- Magee Women's Hospital (Pittsburg)
- Intermountain Healthcare (Utah)
- Ohio State Department of Health



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The next few slides will present examples of successful programs that have reduced elective early term deliveries.

Magee-Women's Hospital's Experience

- Magee-Womens Hospital is the largest maternity hospital in Western Pennsylvania, performing more than 9,300 deliveries in 2007.
- A rise in the use of induction, reaching a high of 28% in 2003.
- In 2006, a process improvement initiative changed the induction scheduling process and strictly enforced the guidelines.

Read slides.



<div>   </div> <h2>Magee Women's Hospital Experience with Guidelines</h2>			
	Baseline 3mos 2004	Voluntary 3mos 2005	Enforced 14mos 2006-7
Deliveries	2,139	2,260	10,895
Elective Inductions <39wks (N) Elective Inductions <39wks (rate)	23 11.8%	21 10.0%	30 4.3% (p<0.001)
Elective Nullip Inductions (N) Elective Nullip Inductions =>C/S (N) Elective Nullip Inductions =>C/S (rate)	29 10 35.7%	33 5 15.2%	87 12 13.8% (p<0.01)
Total Induction Rate	24.9%	20.1%	16.6%
<div> <small>©CDPH</small> <small>32</small> </div> <p>Fisch et al Obstet Gynecol 2009;113:797</p>			

There were three stages to the program. The first was to establish a baseline. The second was measuring the change in elective deliveries with an educational program, and the third after an enforcement policy was put into place. As you can see, there was no significant reduction in the elective delivery rates until the guidelines were strictly enforced.

Magee Women's Hospital Experience



- The importance of strong physician and nursing leadership cannot be overstated. The change in the induction scheduling process that began to enforce the guidelines strictly in late 2006 was spearheaded by the OB Process Improvement Committee, whose members included the hospital's Vice President for Medical Affairs, the Medical Director of the Birth Center, and the nursing leadership for the Birth Center.

The program can succeed only with commitment from the staff and strong medical and nursing leadership.



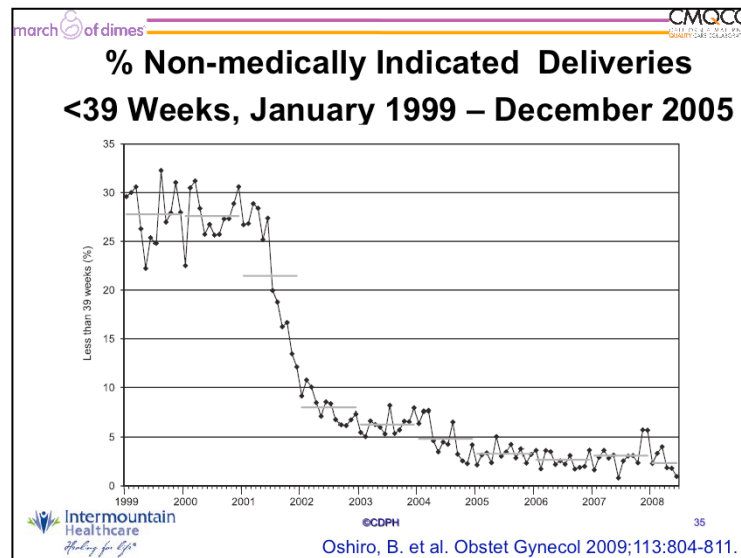
Intermountain Healthcare's Experience

- Intermountain Healthcare is a vertically integrated healthcare system that operates 21 hospitals in Utah and Southeast Idaho and delivers approximately 30,000 babies annually.
- Computerized L&D system.
- MFMs hired by system, but OBs are independent.
- January 2001: 9 urban facilities participated in a process improvement program for elective deliveries.
- 28% of elective deliveries were occurring before 39 completed weeks of gestation.

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Oshiro, B. et al. Obstet Gynecol 2009;113:804-811.

Intermountain Healthcare, a large integrated healthcare system headquartered in Salt Lake City, UT found that approximately 28% of their elective deliveries were being performed under 39 weeks of age. Intermountain Healthcare is an open system with community obstetricians and midwives performing deliveries at their hospitals, but the MFMs were employed by the hospitals. As in Pittsburgh, the program was successful, but it did take strong medical leadership to curtail the elective delivery rate below 39 weeks.



The rate dropped from 28% to under 3% and has been sustained at that level until today.

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Common Themes noted in Intermountain Healthcare's Experience

- Education provided to obstetricians regarding ACOG guidelines, best practice.
- Little change until physicians were held accountable, nurses were empowered, and guidelines were enforced.
- Medical leadership important.

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Although it is necessary to educate everyone on what the risks and benefits are and to inform the medical staff as to what the actual rates of elective deliveries are on a real time basis, it appears that enforcement and strong medical leadership are key to a successful program.



Ohio Perinatal Quality Collaborative

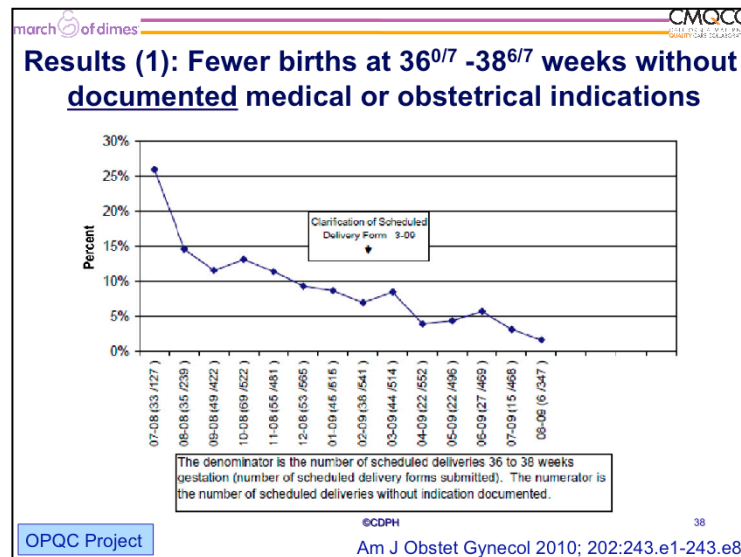
- Reduce inappropriate scheduled deliveries at 36^{0/7} to 38^{6/7} weeks
- 20 maternity hospitals
- 18,384 births in this gestational window in the 14-month study period
- Of these, 4,780 were scheduled deliveries (26% of the 36^{0/7} to 38^{6/7} week population)
- www.OPQC.net

OPQC Project

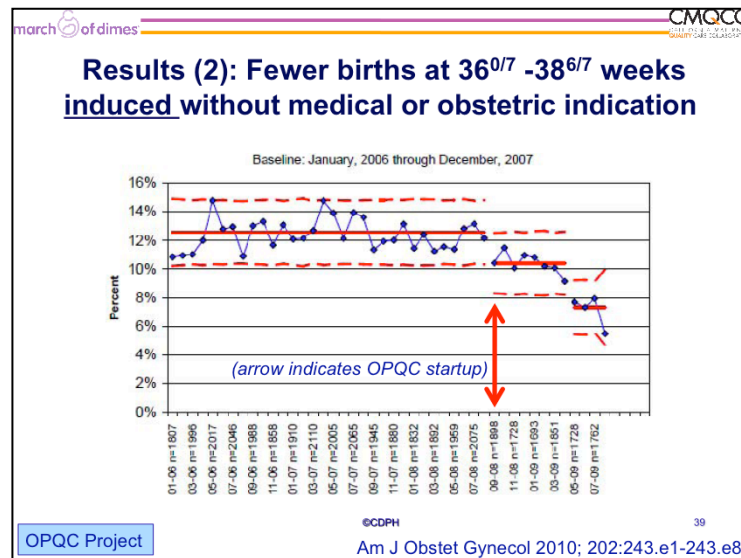
©CDPH
Am J Obstet Gynecol 2010; 202:243.e1-243.e8

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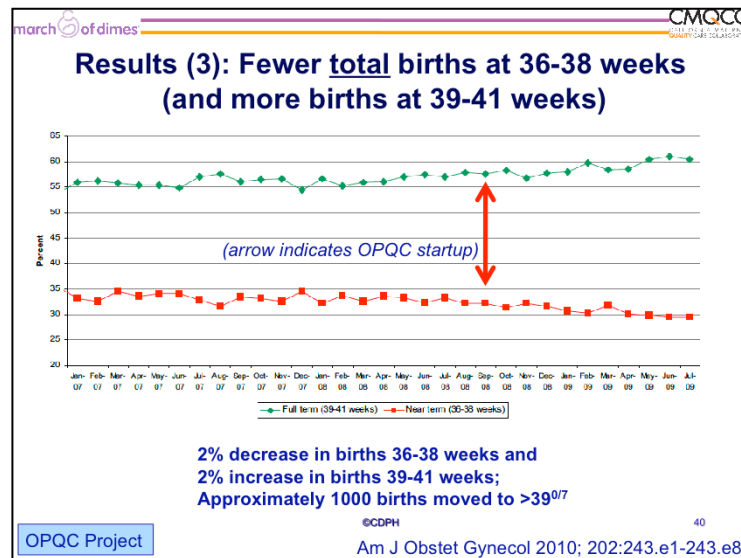
The final example is from the state of Ohio. The Ohio Department of Health partnered with local hospitals and medical staff and, supported through grants from Medicaid, implemented a state-wide voluntary initiative to curb elective scheduled deliveries before 39 weeks.



This program first demonstrated success in reducing the number of deliveries under 39 weeks without medical or obstetrical indications documented in the mother's chart. So Step 1 was improved documentation.



Step 2 was to show fewer INDUCTIONS without medical or obstetric indications. But was this just due to improved documentation?



This slide shows that the reduction in elective deliveries under 39 weeks was not due to a switch in diagnosis from elective to an indicated reason, as the numbers of births at later ages increased, while the early term births declined.

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Alleviating Obstetricians' Fears about Delaying Delivery

- Obstetricians in several of these studies voiced concerns regarding a potential increase in perinatal mortality and maternal morbidity.

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Some obstetricians felt that the risks of continued pregnancy outweighed the risks of delivering before 39 weeks.

Stillbirths Before and After Implementation of Guidelines at Intermountain Healthcare

Table 3. Stillbirth Data (1999–2000 and July 2001 to June 2006)

Weeks of Gestation	1999–2000			July 2001 to June 2006			Odds Ratio	95% CI
	Stillbirths	Deliveries	%	Stillbirths	Deliveries	%		
37	17	4,117	0.41	22	13,077	0.17	0.406	0.22–0.77
38	19	9,954	0.19	21	28,209	0.07	0.390	0.21–0.72
39	10	13,752	0.07	28	51,721	0.05	0.744	0.36–1.53
40	10	7,925	0.13	14	24,140	0.06	0.459	0.20–1.03
41	2	1,938	0.10	3	5,571	0.05	0.522	0.09–3.12
All	58	37,686	0.15	88	12,2718	0.07	0.466	0.33–0.65

Oshiro, B. et al. Obstet Gynecol 2009;113:804-811.

But the data showed that the risk of stillbirth did not increase after the program was implemented.



Wouldn't keeping women pregnant for longer increase their risk of adverse outcomes?

- The experience in Ohio and Utah has shown that morbidity remained the same for macrosomia, preeclampsia, and maternal infections.
- Decreases were seen in stillbirth, low apgar scores, cesarean section for fetal distress, meconium aspiration and postpartum anemia.



Summary:
Reasons to Eliminate Non-medically Indicated (Elective) Deliveries before 39 Weeks

- Reduction of neonatal complications
- No harm to mother if no medical or obstetrical indication for delivery
- Now a national quality measure:
 - National Quality Forum (NQF)
 - Leapfrog Group
 - The Joint Commission (TJC)



Therefore, there are strong reasons to stop elective deliveries before 39 weeks. There is a definite benefit in reducing neonatal complications without compromising the health of the mother. Finally, this has become one of the national benchmarks for perinatal safety and quality.


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**Eliminating Non-medically
Indicated (Elective) Delivery
Prior to 39 Weeks
in Our Hospital:**

*What are the steps to
make this happen?*

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So how can we get started at our hospital?





First Steps (Fundamentals)

- Implement list of “approved” indications
 - Have departmental criteria for making certain diagnoses (e.g. hypertensive complications of pregnancy)
 - Identify strong medical leadership and empower nurses to handle “appeals” for exceptions
- Implement criteria for establishing gestational age >39 weeks
- Gather baseline data

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First we must agree on what constitutes a medical indication for delivery. Using the ACOG or Joint Commission criteria is a good start. Then we must make sure that we are consistently determine gestational age. Finally, we must be able to collect and measure the data.

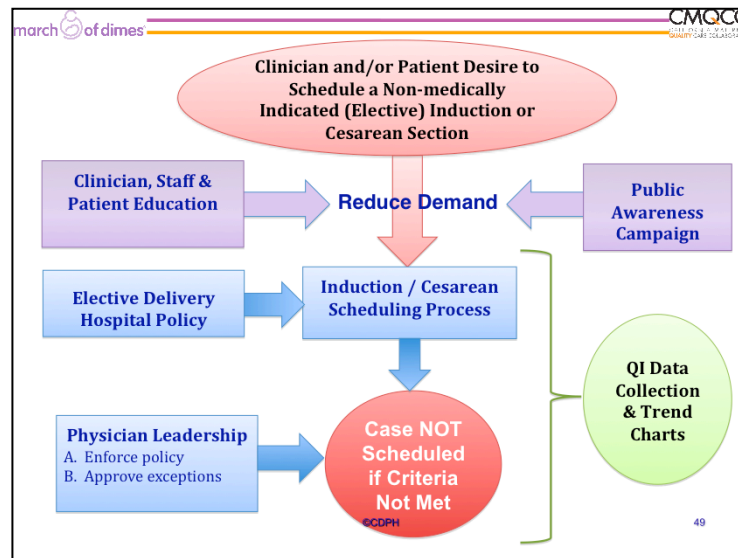
ACOG: "Examples of maternal or fetal conditions that may be indications for induction of labor" ⁴¹	The Joint Commission: National Quality Core Measure PC-01- Specifications for "Conditions justifying delivery <39weeks" ⁴²
• Abruptio placenta	• Placental abruption, placenta previa, unspecified antenatal hemorrhage
• Fetal demise	• Fetal demise, fetal demise in prior pregnancy
• Post-term pregnancy	• Post-term pregnancy
• Premature rupture of membranes	• Rupture of membranes prior to labor (term or preterm)
• Gestational hypertension, preeclampsia, eclampsia, chronic hypertension	• Gestational hypertension, preeclampsia, eclampsia, chronic hypertension
• Maternal medical conditions, e.g., diabetes, renal disease, chronic pulmonary disease, antiphospholipid syndrome	<ul style="list-style-type: none"> • Preexisting diabetes, gestational diabetes • Renal disease • Maternal coagulation defects in pregnancy (includes anti-phospholipid syndrome) • Liver diseases (including cholestasis of pregnancy) • Cardiovascular diseases (congenital and other) • HIV infection
• Fetal compromise, e.g., severe Intrauterine Growth Restriction (IUGR), isoimmunization, oligohydramnios	<ul style="list-style-type: none"> • IUGR, oligohydramnios, polyhydramnios, fetal distress, abnormal fetal heart rate • Isoimmunization (Rh and other), fetal-maternal hemorrhage
<div data-bbox="730 686 987 719" style="border: 1px solid blue; padding: 2px;">These are not exhaustive lists!</div>	<div data-bbox="1033 686 1075 711" style="font-size: small;">© CCHP</div> <div data-bbox="1075 686 1356 727" style="font-size: small;">Fetal malformation, chromosomal abnormality, or suspected fetal injury</div> <div data-bbox="1360 686 1381 711" style="font-size: small;">47</div>

Review list with the audience. Emphasize that this is not an exhaustive list. The Joint Commission list is developed for ease of reporting utilizing ICD-9 codes. If there is not ICD-9 code for an indication, they did not list it. For example, the Joint Commission does not mention previous classical cesarean delivery nor prior myomectomy as an indication for earlier delivery.



Confirmation of Term Gestation

- Ultrasound measurement at less than 20 weeks of gestation supports gestational age of 39 weeks or greater.
- Fetal heart tones have been documented as present for 30 weeks by Doppler ultrasonography.
- It has been 36 weeks since a positive serum or urine human chorionic gonadotropin pregnancy test result.

Review with audience.



This schematic gives an overview of the process for implementing a successful program to reduce or eliminate elective deliveries taking place before 39 weeks gestation. The patient and clinician are critical in reducing elective deliveries. This process must begin with educating not only the clinician, but also the patient as to why it is unsafe to deliver before 39 weeks unless there is a medical or obstetrical reason to do so. The hospital staff is also a key player in this process. In addition, a policy must be created and the medical leadership must be on board. The process will be a lot smoother and cause less angst amongst the hospital staff if they are not placed in a position of having to tell the physician they cannot schedule a delivery. In the event that there is a dispute, the staff must be empowered to refer the scheduling physician to medical leadership for resolution. Finally, in order to track progress, data must be collected and charts reviewed periodically to confirm progress.

Fetal lung maturity testing before 39 weeks and neonatal outcomes

Adverse neonatal outcome	<39 weeks + FLM % (n=442)	39-40 weeks %(n=12881)	Unadjusted RR (95% CI)	Adjusted† RR (95%CI)
Composite adverse outcome	5.9	2.5	2.4 (1.6, 3.5)	1.6 (1.02, 2.6)
Composite adverse outcome II*	5.0	2.0	2.5 (1.6, 3.8)	1.7 (1.01, 2.7)
Suspected or proven sepsis	5.7	2.2	2.6 (1.7, 3.8)	1.7 (1.1, 2.8)
Respiratory support	2.9	1.0	2.8 (1.6, 5.0)	1.8 (0.96, 3.5)
RDS	1.4	0.04	35.0 (11, 114)	7.9 (2.0, 31)
Hypoglycemia	2.0	0.14	15.0 (7.0, 32)	6.7 (2.5, 17.6)
NICU admission	5.9	2.3	2.5 (1.7, 3.7)	1.7 (1.05, 2.7)
Hospitalization >4 days	10.8	3.3	3.3 (2.4, 4.4)	2.6 (1.8, 3.9)

*Excludes suspected sepsis; †Adjusted for maternal age, race, parity, medical complications (hypertensive disorder or diabetes) and baby gender.

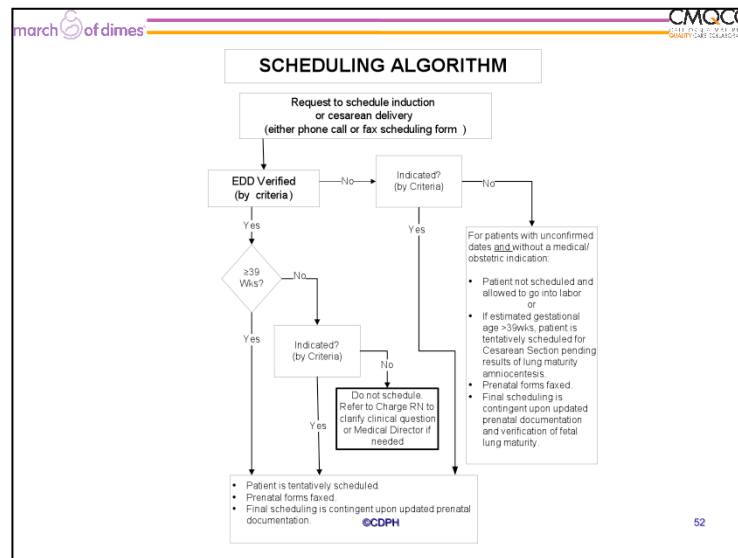
Gestational age and Fetal Lung Maturity (FLM) tests are related but independent predictors of fetal maturity.

©CDPH
Bates E, Rouse D, Chapman V, Mann ML, Carlo W, Tita A. Am J Obstet Gynecol 2011;(6) S17, 2009

This is an additional slide for the Q&A period of the talk. This shows that despite having a mature lung profile, neonates still are at higher risk for having complications if delivered before 39 weeks.



This MAP-IT chart is a method for how to implement change. The first step is to organize a QI team to implement to outline the process and to oversee the project. The second step involves this group assessing the scope of the problems and the barriers to change. The third step involves strategizing on how to overcome barriers to change and to plan an implementation process. The fourth step is to implement the plan of action. The fifth step is to track progress and then to make adjustments in the plan as necessary.



A sample scheduling algorithm is shown here. And the next few slides will walk us through this process.


Overview of Changes to the Scheduling Process


- All scheduled deliveries (inductions or cesarean sections) must have the following documented at the time of scheduling:
 - Accurate gestational age.
 - Appropriate indication for induction or cesarean section.

Scheduling Process (continued)

- Patients can be scheduled either calling the scheduler or faxing in the request.
- Elective deliveries including repeat scheduled cesarean sections must be at least 39 weeks gestation based upon ACOG criteria.
- Any scheduling conflicts will be directed to the OB Chair or Director of L&D for resolution.
- On going problems that are identified will either be taken care of as soon as possible or discussed at future department meetings.
- Data will be reported back on a regular basis to inform everyone how the project is going.

Data Collection





Sample
Scheduling
Form

BEST MEDICAL CENTER
SCHEDULING FORM FOR INDUCTIONS AND CESAREAN SECTIONS
Call (XXX) XXX XXXX or Fax (XXX) XXX XXXX

Name _____ Phone _____

OR Provider _____ C/S _____

Type of Delivery Planned ☐ Induction ☐ C/S Desired Date/Time _____

DATING

EDC: _____ Gestational Age at Date of Induction or C/S: _____ (week/day)

EDC Based on: ☐ US 10-20 weeks; ☐ Doppler FHT* for 30 weeks; ☐ hCG for 36 weeks

Other dating criteria: _____ (details)

*In ATDC Guidelines, women should be 18 wks or greater before inducing or elective C/S. ATDC also states that a history of late term or the absence of correct induction is not considered an indication for delivery.

☐ Fetal Lung Maturity test result: _____ Date: _____

INDICATION

Obstetric and Medical Conditions (OK if <39 weeks)

(need to deliver <39 weeks dependent on severity of condition)

☐ Abruption
☐ Stress
☐ Preeclampsia
☐ Gestational HTN
☐ GDM
☐ >41+0 weeks
☐ HIV/AIDS
☐ Fetal Demise (current)
☐ Fetal Demise (prior)
☐ Oligohydramnios
☐ Polyhydramnios
☐ UGR
☐ Non-reassuring fetal status
☐ Schimmielization
☐ Fetal malformation
☐ I want with complication

☐ Heart disease
☐ Liver disease (e.g. cholestasis of preg.)
☐ Chronic HTN
☐ Diabetes (Type I or II)
☐ Renal disease
☐ Coag/Thrombophilia
☐ Pulmonary disease
☐ HIV infection
☐ Other: _____

Perinatology consult obtained and agrees with plan: _____ (signature)

Scheduled C/S (<39 wks)

☐ Prior C/S
☐ Prior classical C/S
☐ Prior myomectomy (may be earlier with fetal lung maturity test)
☐ Breech presentation
☐ Other malpresentation
☐ Patient choice
☐ Twin w/o complication (ok >38 wks)

Elective Induction

Indication

☐ Patient choice/social
☐ Macrosomia
☐ Distance
☐ Other: _____

Description/Details:

CERVICAL EXAM (For inductions) _____ (within 7 days of date of induction)

Date of Exam: _____

Score	Station	Effacement	Dilation	Consistency	Position
0	Closed	0-30%	<3	Firm	Posterior
1	1-2	40-50%	3	Medium	Midposition
2	2-4	60-70%	+1, 0	Soft	Anterior
3	5-6	80%	+1, +2	-----	-----

Total Score: _____

*This section is used only by those hospitals using cervical exam criteria for scheduling induction

SCHEDULING OFFICE USE



Scheduled? ☐ Yes ☐ No

Referenced to Dept Chair? ☐ Yes ☐ No

©CDPH Confirmed Date/Time: _____ Prenatal Record presented? ☐ Yes ☐ No

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Shown here is a sample scheduling form, which can be faxed in. Alternatively, the office can call the scheduler who can take down the pertinent information.

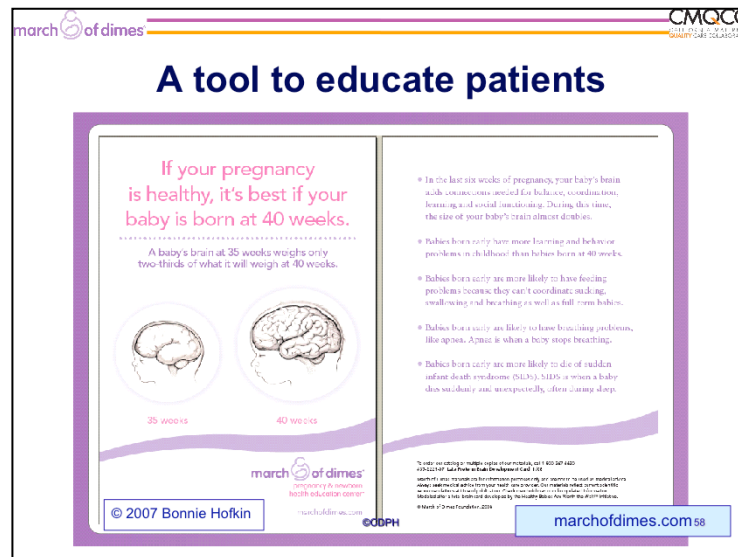
QI Data Collection Form for Singleton Scheduled Inductions and Cesarean Sections

SAMPLE		OB Initials	Scheduled Induction or Cesarean Section	Bishop Score	Dates		OB/Medical Condition	Sched CS	Outcomes	
Admit Date	Name				GA (week & day)	Dates confirmed by sono < 20 wk			Mature fetal lung test	Elective Ind
1/17/10	Smith, J	EW	Ind	8	39 + 1	X	Placenta previa		OV	No
1/15/10	Jones, M	JG	CS		36 + 3	X	Placenta previa		CS	Yes
1/16/10	Lee, M	CO	CS		38 + 3	X		Macrosomia	OV	No
1/16/10	Carpenter, A	JG	Ind	8	40 + 4	X		Choice	SV	No
<p>Comments:</p> <ol style="list-style-type: none"> The last two columns are outcome measures that help reinforce the change process. The lung maturity testing column is included as an option to document lung maturity for scheduled deliveries with a medical/OB indication, e.g. placenta previa. Lung maturity testing as a column on this log is not meant to imply that elective induction at <39 weeks is acceptable if there is a mature lung test (this is contrary to ACOG guidelines). This data collection tool is for women with one fetus since the national guidelines for <39 weeks are specified for singletons only; multiples have different gestational age guidelines. A hospital may choose to collect data on multiples, if they want to track this population. <p>Form options:</p> <ol style="list-style-type: none"> NICU length of stay may be tracked instead of or in addition to NICU admission. Bishop Score and Fetal Lung Maturity Test do not relate to the recommended QI measures but may be of interest to QI project leaders. These columns can be removed or modified based on local hospital guidelines. Data collection may be limited to women who give birth >= 37 weeks 0 days gestation or extended to include all women who give birth. 										
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										86

Data collection should mirror the work flow. This is a sample data collection form designed to match the scheduling form so that data could be collected from that form (in the work flow where the scheduling data is verified on admission), with the simple outcomes collected at delivery. The data from this form can be used to track the progress of the program.

What providers can do

- Educate your patients and staff about the risks and benefits of delivery before or after 39 weeks.
- Perform an ultrasound before 20 weeks to confirm gestational age on all your patients.
- Educate your staff on the new scheduling process.
- Take a lead on promoting best practice.



Here is an example of a patient education tool (provided courtesy of the March of Dimes) that can be used to educate patients in the office or at prenatal classes. Featured on the slide is a copy of the brain card that providers can use to assist them in educating their patients about why the last weeks of pregnancy count.

March of Dimes  CMQCC 

For More Information Contact:

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Leslie Kowalewski
LKowalewski@marchofdimes.com

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The March of Dimes and California Maternal Quality Care Collaborative Toolkit is a great place to start for further information

The slide features a white background with a thin black border. At the top left is the March of Dimes logo, and at the top right is the CMQCC logo. The main title is centered in purple text, and the subtitle is centered in orange text. Below the subtitle, a blue hyperlink provides funding information. At the bottom, there are small copyright notices for CDPH and the number 60.

March of Dimes CMQCC

Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age

An Implementation Strategy

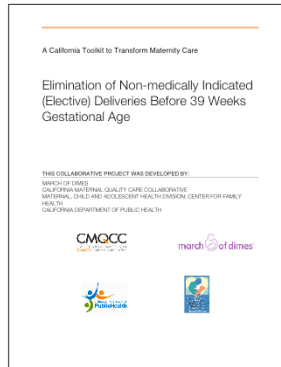
[Funding for the development of this toolkit was provided by:](#)
Federal Title V block grant Funding from the California Department of Public Health; Maternal , Child and Adolescent Health Division was used by the California Maternal Quality Cre Collaborative to develop the toolkit; and March of Dimes.

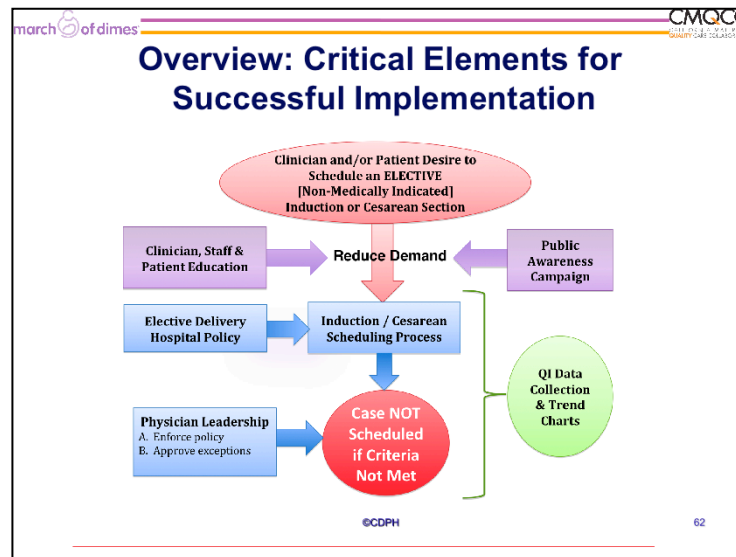
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Slide Set #2

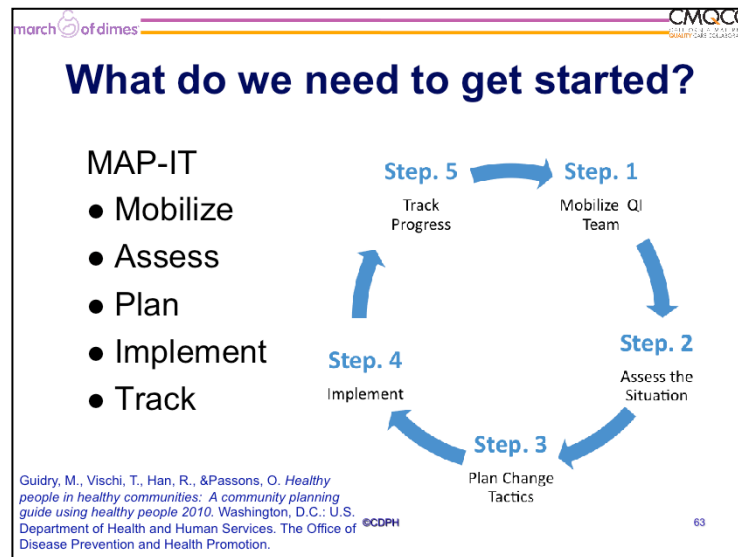
The following is an implementation overview slide set designed for the program implementation (QI) team. It can be adapted to help support and outline the key change strategies within an institution that need to be addressed to eliminate elective deliveries <39 weeks.

Elimination of Non-medically Indicated (Elective) Deliveries Prior to 39 Weeks







This schematic gives an overview of the process for implementing a successful program to reduce or eliminate elective deliveries taking place before 39 weeks gestation. The patient and clinician are critical in reducing elective deliveries. This process must begin with educating not only the clinician, but also the patient as to why it is unsafe to deliver before 39 weeks unless there is a medical or obstetrical reason to do so. The hospital staff is also a key player in this process. In addition, a policy must be created and the medical leadership must be on board. The process will be a lot smoother and cause less angst amongst the hospital staff if they are not placed in a position of having to tell the physician they cannot schedule a delivery. In the event that there is a dispute, the staff must be empowered to refer the scheduling physician to medical leadership for resolution. Finally, in order to track progress, data must be collected and charts reviewed periodically to confirm progress.





This MAP-IT chart is a method for how to implement change. The first step is to organize a QI team to implement to outline the process and to oversee the project. The second step involves this group assessing the scope of the problems and the barriers to change. The third step involves strategizing on how to overcome barriers to change and to plan an implementation process. The fourth step is to implement the plan of action. The fifth step is to track progress and then to make adjustments in the plan as necessary.



Mobilize the QI Team:

- Recruit champions
 - Who will organize the meetings?
 - Who needs to be on the team and at the meetings?
 - Nurse leaders: e.g. L&D Manager, CNS, Perinatal QI RN
 - Physician leaders: e.g. OB Chair, MFM, Neonatologist, nurse midwife
 - Data analyst and Risk Management
 - What are the goals and aims of the project?
 - When is the first meeting?



A key step is to develop a team to oversee this project. A QI nurse in conjunction with a physician leader (typically the Chair of Obstetrics and the labor and delivery manager) are the key members who should form the core of this team. The QI nurse or manager of L&D are typically aware of the current practice and who the key individuals are. This will be important as you complete your QI team.

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Assess the Situation

- What is your induction and cesarean section rate? (Baseline assessment)
 - Elective vs indicated
 - Before 39 weeks and between 37^{0/7} and 38^{6/7} weeks
 - What are your NICU admission rates and trends?
- Assess your scheduling process
 - Who schedules?
 - Do you know the Estimated Gestational Age and indication at the time of scheduling?
- Who are the champions, adopters, and resisters?
- What is the process for refereeing a case?
- What are the barriers to change?

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The actual numbers of cases may not be available or known without further investigation. The data search should typically be performed and the data available before the first meeting with a larger group. If the data are not available, then serious thought should be placed into how to obtain this information, as it will be critical in measuring the success of this program. What is the current scheduling process? Is the gestational age and indication for delivery recorded at the time the delivery is scheduled? What happens when there is a scheduling conflict? Who are the potential champions, early adopters, or resisters? What are the hurdles that need to be overcome?

ACOG: "Examples of maternal or fetal conditions that may be indications for induction of labor" ¹¹	The Joint Commission: National Quality Core Measure PC-01- Specifications for "Conditions justifying delivery <39weeks" ¹²
<ul style="list-style-type: none"> • Abruptio placenta 	<ul style="list-style-type: none"> • Placental abruption, placenta previa, unspecified antenatal hemorrhage
<ul style="list-style-type: none"> • Fetal demise 	<ul style="list-style-type: none"> • Fetal demise, fetal demise in prior pregnancy
<ul style="list-style-type: none"> • Post-term pregnancy 	<ul style="list-style-type: none"> • Post-term pregnancy
<ul style="list-style-type: none"> • Premature rupture of membranes 	<ul style="list-style-type: none"> • Rupture of membranes prior to labor (term or preterm)
<ul style="list-style-type: none"> • Gestational hypertension, preeclampsia, eclampsia, chronic hypertension 	<ul style="list-style-type: none"> • Gestational hypertension, preeclampsia, eclampsia, chronic hypertension
<ul style="list-style-type: none"> • Maternal medical conditions, e.g., diabetes, renal disease, chronic pulmonary disease, antiphospholipid syndrome 	<ul style="list-style-type: none"> • Preexisting diabetes, gestational diabetes • Renal disease • Maternal coagulation defects in pregnancy (includes anti-phospholipid syndrome) • Liver diseases (including cholestasis of pregnancy) • Cardiovascular diseases (congenital and other) • HIV infection
<ul style="list-style-type: none"> • Fetal compromise, e.g., severe Intrauterine Growth Restriction (IUGR), isoimmunization, oligohydramnios 	<ul style="list-style-type: none"> • IUGR, oligohydramnios, polyhydramnios, fetal distress, abnormal fetal heart rate • Isoimmunization (Rh and other), fetal-maternal hemorrhage • Fetal malformation, chromosomal abnormality, or suspected fetal injury

These are NOT exhaustive lists!

These are important examples of criteria used by national organizations. It must be emphasized to the medical and nursing staff that these lists are not exhaustive. The Joint Commission list was generated with the ease of capturing the information in mind using ICD-9 codes. There are situations that a delivery prior to 39 weeks is justified - such as a prior classical cesarean section or prior myomectomy - which do not have specific ICD-9 codes.



Confirmation of Term Gestation

- Ultrasound measurement at less than 20 weeks of gestation supports gestational age of 39 weeks or greater.
- Fetal heart tones have been documented as present for 30 weeks by Doppler ultrasonography.
- It has been 36 weeks since a positive serum or urine human chorionic gonadotropin pregnancy test result.

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ACOG Practice Bulletin: Induction of Labor. Number 107, August 2009

This slide lists ACOG's recommendation for confirming a term gestational age. In most situations, an early ultrasound is the best method for confirming or determining the gestational age or due date.

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Plan Change Tactics

- Develop revised scheduling processes and guidelines
 - Establish an appeal process
 - Appoint physician leader(s) to enforce scheduling process and approve exceptions
- Describe the new guidelines
- Revise forms and scheduling policy and procedure
- Develop data collection plan and forms
- Determine what clinician and patient education materials are needed
- Determine implementation start date

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Read the slide.

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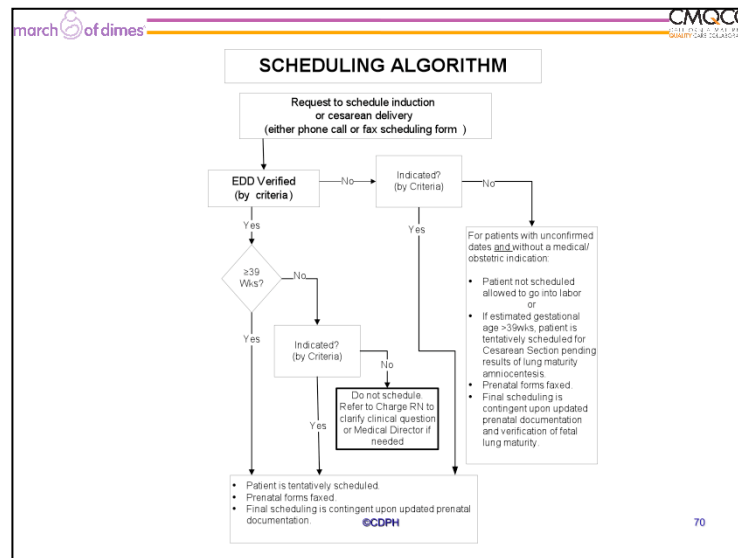
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Center for Maternal and
Quinlan Quality Collaborative

Implement



- Convene department and staff meetings to educate physicians and staff
 - Baseline assessment
 - Ongoing data collection plan
 - Policy and procedure with **Approved Indications**
 - New scheduling process and forms
- Provide educational materials for physicians, staff, and patients
- Choose start date and begin data collection and reporting on a regular basis

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It is important to inform everyone of the project. Key information should include baseline data before the project starts. Also, physicians must be included early in the process and be able to provide input and have their questions and concerns answered.





A sample scheduling algorithm is shown here. The next few slides will walk us through this process.





Overview of Changes to the Scheduling Process

- All scheduled deliveries (inductions or cesarean sections) must have the following documented at the time of scheduling:
 - Accurate gestational age.
 - Appropriate indication for induction or cesarean section.





The patient's gestational age and the reason that the delivery is being scheduled are the two critical factors in the scheduling process.



Scheduling Process (continued)

- Patients can be scheduled either by calling the scheduler or faxing in the request.
- Elective deliveries including repeat scheduled cesarean sections must be at least 39 weeks gestation based upon ACOG criteria.
- Any scheduling conflicts will be directed to the OB Chair or Director of L&D for resolution.
- Ongoing problems that are identified will either be taken care of as soon as possible or discussed at future department meetings.
- Data will be reported back on a regular basis to inform everyone how the project is going.



The scheduling form can be either faxed in or the scheduler can fill in the information when the office calls in to request a date and time for delivery. If there are any conflicts or concerns raised by the scheduler, these should be referred to the proper medical chain of command for resolution. For example, if a doctor ask that Mrs. Jones be scheduled at 38 weeks and 6 days for an elective cesarean delivery, the scheduler should answer, “I’m sorry Dr. Smith, I am not allowed to schedule Mrs. Jones as she is less than 39 weeks and it is against our 39 week policy. May I have Dr. Brown, the director of labor and delivery call you?” It is important not to have the scheduler or a nurse be placed in an adversarial position with the physician’s office.

Sample Scheduling Form

BEST MEDICAL CENTER
SCHEDULING FORM FOR INDUCTIONS AND CESAREAN SECTIONS
Call (XXX) XXX-XXXX or Fax (XXX) XXX-XXXX

Name _____ Phone _____
OR Provider _____ C/S _____
Type of Delivery Planned ☐ Induction ☐ C/S Desired Date/Time: _____

DATING
EDC: _____ Gestational Age at Date of Induction or C/S: _____ (week+day)
EDC Based on: ☐ US 10-20 weeks, ☐ Doppler FHT for 30 weeks, ☐ +HCG for 30 weeks
☐ Other dating criteria: _____ (details)
By ACOG Guidelines, women should be 39 weeks or greater before scheduling an elective cesarean section. ACOG also states that a woman's first and second cesarean section is not considered an indication for delivery.
☐ Fetal Lung Maturity test result: _____ Date: _____

INDICATION
Cesarean and Medical Conditions (OK if <39 weeks)
(need to deliver <39 weeks dependent on severity of condition)
☐ Abruption ☐ Heart disease ☐ Prior C/S
☐ Previa ☐ Liver disease (e.g. cholestasis of preg.) ☐ Prior classical C/S
☐ Preeclampsia ☐ Chronic HTN ☐ Prior myomectomy (may be earlier with fetal lung maturity test)
☐ Gestational IITN ☐ Diabetes (Type I or II) ☐ Breech presentation
☐ CFM ☐ Renal disease ☐ Other malpresentation
☐ >140 weeks ☐ Coag/Thrombophilia ☐ Patient choice
☐ PROM ☐ Pulmonary disease ☐ Other
☐ Fetal Demise (current) ☐ HIV infection ☐ Twin with complication (ok >38 wks)
☐ Fetal Demise (prior)
☐ Oligohydramnios
☐ Polyhydramnios
☐ IUGR
☐ Non-reassuring fetal status
☐ Non-immunization
☐ Fetal malformation
☐ I was with complication (consult name) _____

Perinatology consult obtained and agrees with plan
(consult name) _____

Elective Induction (39 weeks)
☐ Patient choice/total
☐ Macrosomia
☐ Distance
☐ Other

Description/Details: _____



SERVICES/EXAM (for inductions) _____ (within 7 days of date of induction)
Date of Exam: _____

Score	Station	Effacement	Station	Consistency	Position	Total Score
1	0-2	0-30%	-3	Firm	Posterior	(Use section to read only by best length way, cervical exam criteria for induction induction)
2	3-4	40-70%	-2	Medium	Midposition	
3	5-6	80-100%	+1, +2	Soft	Anterior	

SCHEDULING OFFICE USE
Scheduling: _____ by _____
Referred to Dept Chair? ☐ **CDPM** (Indicated Date/Time) _____
Prenatal/Record/representation: ☐ Yes

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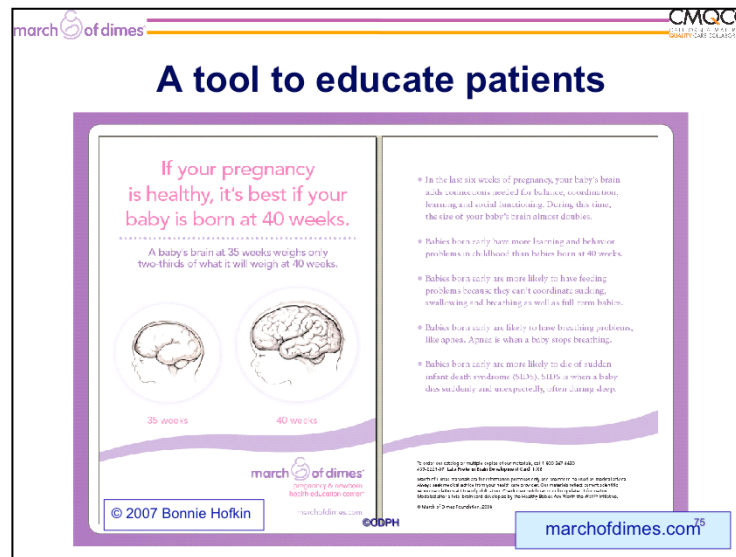
Shown here is a sample scheduling form, which can be faxed in. Alternatively, the office can call the scheduler who can take down the pertinent information.

QI Data Collection Form for Singleton Scheduled Inductions and Cesarean Sections

Admit Date	Name	OB Initials	Scheduled Induction or Cesarean Section	Bishop Score	Dates		OB/Medical Condition	Sched CS	Outcomes	
					GA (week & day)	Dates confirmed by sono < 20 wk			Mature fetal lung test	Data collected from Delivery and NICU Logbooks
1/17/10	Smith, J	EW	Ind	8	39 + 1	X	Placenta previa		OV	No
1/15/10	Jones, M	JG	CS		36 + 3	X	Placenta previa		CS	Yes
1/16/10	Lee, M	CO	CS		38 + 3	X		Macrosomia	OV	No
1/16/10	Carpenter, A	JG	Ind	8	40 + 4	X		Choice	SV	No
<p>Comments:</p> <ol style="list-style-type: none"> The last two columns are outcome measures that help reinforce the change process. The lung maturity testing column is included as an option to document lung maturity for scheduled deliveries with a medical/OB indication, e.g. placenta previa. Lung maturity testing as a column on this log is not meant to imply that elective induction at <39 weeks is acceptable if there is a mature lung test (this is contrary to ACOG guidelines). This data collection tool is for women with one fetus since the national guidelines for <39 weeks are specified for singletons only; multiples have different gestational age guidelines. A hospital may choose to collect data on multiples, if they want to track this population. <p>Form options:</p> <ol style="list-style-type: none"> NICU length of stay may be tracked instead of or in addition to NICU admission. Bishop Score and Fetal Lung Maturity Test do not relate to the recommended QI measures but may be of interest to QI project leaders. These columns can be removed or modified based on local hospital guidelines. Data collection may be limited to women who give birth >= 37 weeks 0 days gestation or extended to include all women who give birth. 										
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Data collection should mirror the work flow. This is a sample data collection form designed to match the scheduling form so that data could be collected from that form (in the work flow where the scheduling data is verified on admission), with the simple outcomes collected at delivery. The data from this form can be used to track the progress of the program.



As patients comprise perhaps half of the decision-making process, it is important to educate the patient. Patient education should ideally take place during prenatal care, before the discomfort of the last weeks of pregnancy and far enough ahead to influence her expectations.

Here is an example of a patient education tool (provided courtesy of the March of Dimes) that can be used to educate patients in the office or at prenatal classes. Featured on the slide is a copy of the brain card that providers can use to assist them in educating their patients about why the last weeks of pregnancy count.

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CHARTING - MEASURING -
QUALITY CARE TO ALL

Track Progress

- Use data and audit tools to track the number of elective deliveries <39 weeks
- Develop trend charts and report back to staff and providers on a regular basis
- Address issues and concerns as soon as possible

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Of course, it is essential to track progress and give feedback to the staff and physicians on an ongoing basis and to address issues and concerns sooner rather than later.

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CHILDREN'S HEALTH & DEVELOPMENT
QUALITY CARE COLLABORATIVE

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The March of Dimes and California Maternal Quality Care Collaborative Toolkit is a great place to start for further information

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Website Resource Links

California Maternal Quality Care Collaborative	http://www.cmqcc.org
Hospital Corporation of America	http://www.hcahealthcare.com
Institute for Healthcare Improvement	www.ihl.org
Intermountain Health	www.intermountainhealthcare.org
Lamaze International	www.lamaze.org
March of Dimes	www.marchofdimes.com
Ohio Perinatal Quality Collaborative	www.opqc.net

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