Case Study: Implementation of Elective Induction Policy in a Large/Urban Hospital

St. Francis Hospital & Health Services
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This document includes all of the St. Francis labor induction policy as well as additional information below provided by St. Francis:

Demographic Information

Size of Area/Region Served: Provides coverage to 56 zip codes in south central Indiana.

Number of Beds: 550

Number of LDRPs: 15 L&D beds, 21 postpartum beds

Number of Delivering Practitioners: 28 (18 OB/GYNs and 10 Family Practice)

Number of Deliveries/Year: 2,745 in 2009

Implementation of the Elective Induction Policy

The Need: The need to implement restrictions to elective inductions was first identified by Quality Management and Nursing leadership. Throughout the years we had often reviewed NICU admissions of infants electively induced prior to 39 weeks. We also frequently experienced a lack of room availability if our induction schedule had been full for more than one day. With the advent of the IHI Induction bundle and Anthem’s request regarding an institutional policy we became increasingly driven to review our process. The Vice President of Medical Affairs charged us with amending our induction policy using evidence based practices for support during our presentations to the Obstetrics department.

Barriers/Fears/Protests: Our primary barrier was the lack of a physician champion. The Vice President of Medical Affairs is a former obstetrician/gynecologist but was no longer involved in everyday practice. The first review of the policy at a department meeting was not well received. We heard the common complaints of “cookbook medicine” and “my patients expect me to deliver them so I have to schedule inductions on my call day.” Our primary stance was that we must do what is best for the patient and often times we were functioning outside of established ACOG guidelines. We discussed being proactive in changing our processes before we were acted upon by outside agencies. Those arguments, in addition to the voice of the Vice President, at least brought a grudging acceptance of the policy implementation.

Process: Our current practice strives to keep the nurse out of the middle. Inductions prior to 39 weeks are allowed to be scheduled but if no medical reason is given for the induction the physicians know it will be reviewed by the Patient Care committee if adequate documentation is not available. Physicians are trended and will receive letters or phone calls from the departments’ quality chairmen or the
Medical Director as needed. Over the past few months we have reviewed fewer cases due to improved documentation.

Benefits: As of spring 2010, it has been nearly a year since policy implementation. In that time we have noted a significant reduction in the number of days when we lack available beds. In speaking with the NICU manager they have definitely noticed a reduction in the number of infants admitted for 3-7 days that was often associated with pre-39 week inductions. Their major admissions now are long-term or few hours transitional stay.

NICU/Peds?: We did not include pediatrics in the policy formation. We had never received major complaints from them regarding this issue so it was not forefront in our minds to include them.
I. Policy/Purpose: To outline nursing management of patients requiring pharmacologic agents for the induction/augmentation of labor.

II. Scope: Labor and Delivery

III. Responsible Persons: RN, NP

IV. Equipment: As stated throughout the policy.

V. Procedure:

Indications for cervical ripening/induction of labor (IOL):

- Abruptio placenta
- Chorioamnionitis
- Fetal demise
- Pregnancy induced hypertension/pre-eclampsia, eclampsia
- Premature rupture of membranes
- Post term pregnancy
- Maternal medical conditions (eg, diabetes mellitus, chronic renal, pulmonary, cardiac or hepatic disease).
- Fetal compromise (eg, severe fetal growth restriction, isoimmunization).

Contraindications to cervical ripening/IOL:

- Vasa previa or complete placenta previa
- Transverse fetal lie
- Umbilical cord prolapse
Components of Elective Induction

Gestational age of 39 weeks or greater:

Confirmation of term gestation: 1) fetal heart tones have been documented for 30 weeks via Doppler, 2) 36 weeks since a positive serum or urine hCG pregnancy test, 3) ultrasound measurement of crown-rump length, obtained at 6-12 weeks that supports a gestational age of at least 39 weeks, or 4) an ultrasound obtained at 13-20 weeks confirms the gestational age of at least 39 weeks determined by clinical history and physical examination.

Reassuring fetal status: documentation of fetal well being prior to beginning the induction; stable baseline rate, moderate variability, and presence of accelerations.

Pelvic examination: assessment of fetal presentation and favorable Bishop’s score

Absence of hyper stimulation: the absence of hyperstimulation is documented during the induction process.

Components of augmentation:

Estimated fetal weight: documented prior to the start of the augmentation

Reassuring fetal status, pelvic examination and absence of hyperstimulation as above.

Cervical Ripening with Cervidil and Cytotec

1. Start IV or IV lock and draw admission labs if ordered.
2. If needed qualified personnel will verify fetal presentation by ultrasound prior to first administration of the drug.
3. Obtain and record baseline vital signs and fetal heart tones. During cervical ripening, vital signs will be evaluated and documented every 30 minutes X two (2) after dose administration and every four (4) hours thereafter. Temperature will be evaluated every four (4) hours; this will be increased to every two (2) hours after membranes are ruptured. Fetal heart tones and uterine activity will be evaluated every 30 minutes unless otherwise ordered.
4. Obtain Cervidil from refrigerator and charge appropriately via Pyxis. Allow warming to room temperature.
5. Obtain Cytotec from Pyxis taking special care to remove proper dose. All personnel who may be pregnant or suspect they may be pregnant must take precautions when handling and dividing the tablets. These precautions include wearing gloves and a mask when handling tablets.

Special Note: Refer to St. Francis Hospital Patient Care Services Policy, Handling and Disposal of Hazardous Material.
6. Medication administration:
   a. Assist patient to lithotomy position.
   b. Perform sterile vaginal exam to determine baseline cervical dilation.
   c. Cervidil will be placed transversely in the posterior fornix of the vagina. A small amount of water-soluble lubricant may be used to assist insertion.
   d. Cytotec administration: 25-50 micrograms placed high in the posterior vaginal fornix. This offers a sustained release of medication and doses should not be administered more frequently than every 3-6 hours. Oral dosing is 25-50 micrograms every 4-6 hours.
   e. After intra-vaginal placement of cervical ripening agents, the patient’s head should not be raised more than 30 degrees for one (1) hour. A lateral position is encouraged when the patient is reclined in bed. Patient activity changes will be per physician, resident, or nurse practitioner.

7. Discontinuing medication:
   a. Cervidil will be discontinued at least thirty (30) minutes prior to oxytocin initiation.
   b. Oxytocin should not be administered within four (4) hours of the last Cytotec dose.

8. Special circumstances for Cytotec administration:
   a. Fetal demise: uterine and cervical response is inversely related to gestational age. Cytotec used for demise situations may require higher dosages than described above for cervical ripening/Induction of Labor (IOL). Typical dose for first trimester losses is 400-800 micrograms titrating downward as gestation advances.
   b. Postpartum use: Cytotec may be used in place of oxytocin to control bleeding post delivery. Common dosage after delivery is 200 micrograms orally.
   c. Postpartum hemorrhage: Cytotec may be given in dosages of 200-1000 micrograms rectally.

Cervical Ripening with transcervical foley catheter insertion

1. Gather supplies per physician preference which may include foley catheter or commercially prepared cervical ripening balloon, catheter guide, ring forceps, sterile saline, and solution to cleanse the external cervical os.
2. Assist with the procedure as needed and insufflate the catheter balloon with sterile saline per manufacturer or physician instructions following placement.
3. Tape the catheter to the patient’s medial thigh on minimal traction per physician preference.
4. If the balloon is not expelled spontaneously, it should be removed 12 hours after insertion.
**Induction/Augmentation of Labor**

**Assessment/Interventions:**

When the order is received for induction/augmentation:

1. The patient/support person/family will be informed of the reasons for treatment and explanations of nursing interventions associated with induction of labor.
2. Throughout the course of treatment, the patient/family will be kept informed of her status.
3. A complete assessment will be done by an RN, which includes fetal and uterine baseline activity prior to initiating therapy.
   a. Baseline uterine activity (duration, frequency and intensity) and fetal well being will be assessed by electronic fetal monitoring and documented by a twenty (20)-minute strip.
   b. Continuous electronic fetal monitoring will assess uterine activity and fetal status.
4. The RN caring for the patient receiving pharmacologic induction of labor will care for no more than two (2)-laboring patients.
5. The nurse will obtain premixed, prepackaged oxytocin 30 units in 500 ml normal saline from the Pyxis. This solution will be piggy backed into a primary IV line, attached closely to the venous puncture site, and will be administered via an infusion pump.
6. The RN should verify with the physician his/her immediate availability by phone or pager and the physician’s ability to respond in the event of an emergency.
7. Continuous data collection will include uterine activity, B/P, and FHR (fetal heart rate) every thirty (30) minutes for low-risk pregnancies and every fifteen (15) minutes for high-risk pregnancies. Temperature every four (4) hours unless above 99.6 degrees or ruptured membranes, then every two (2) hours. Intake & Output (I&O) will be done every four (4) hours, unless rate of infusion exceeds 18 milliunits/min. I&O will be done hourly thereafter.
8. The patient should be maintained in a lateral recumbent position as much as possible.
9. An intrauterine pressure catheter may be placed, with a physician’s order, after the membranes have ruptured.
10. Verify GBS (Group B Streptococcal) status. If status is positive or unknown with identified risk factors, verify with physician antibiotic choice and when therapy is to be initiated.

**Labor Induction/Augmentation Oxytocin schedules A & B**

**Schedule A:**
1. Begin the infusion at one (1) milliunits/min for induction/augmentation.
2. Increase the infusion by 1-2 milliunits/min every 30-60 minutes until adequate progress of labor is established and/or contractions are every 2-3 minutes.
3. Labor progression evaluation: 0.5-1 centimeters of cervical dilation per hour during labor induction, particularly for nulliparous women.
4. Once adequate labor is established, maintain or decrease oxytocin by 1 milliunit/minute every 30-40 minutes unless contraction pattern becomes inadequate for continued labor progress.
5. Nurse must notify physician and obtain order to increase Oxytocin beyond 20 milliunits/min.

Schedule B: Active Management of Labor
1. The patient and family will be educated on both the approach and expectations of active management of labor.
2. Active management of labor is limited to nulliparous patients with an uncomplicated term gestation with a fetus in the cephalic presentation.
3. Once the diagnosis of labor is made, the patient must progress 1 cm/h based on cervical examinations performed every 1-2 hours. If this progression is not realized active management may be indicated.
4. Once active management is initiated; there will be a 1:1 nurse patient ratio.
5. Begin the infusion rate at 6 milliunits/min for augmentation when a high dose schedule is desired or ordered by the physician.
6. Increase the infusion by 6 milliunits/min every 20-30 minutes until the patient is having uterine contractions (duration of 45-60 seconds) every 2-3 minutes. Nurse must notify physician and obtain order to increase Oxytocin beyond 36 milliunits/min.

Use of Prostin E-2 Vaginal Suppository for Induction of Labor
1. Prostin E-2 suppositories are used in cases of fetal demise up to 28 weeks gestation, evacuation of the uterus due to a hydatidiform mole, and postpartum hemorrhage.
2. Obtain baseline vital signs prior to insertion. Physician or nurse practitioner will insert the initial suppository.
3. Prostin E-2 suppositories are kept frozen; suppositories are brought to room temperature before administration. They are kept in the medicine refrigerator’s freezer compartment but must be charged through the Pyxis so pharmacy can replace to stock.
4. Laminaria is sometimes inserted in the cervical os in the physician’s office before the patient is admitted. This must be removed before the suppository is inserted and requires a physician’s order for the nurse to remove.
5. If possible the patient should then remain in the supine position for 10 minutes following insertion. Prostin E-2 suppositories must never be inserted rectally. Extreme hypotension may result.
6. After each suppository placement, take blood pressure, pulse, respirations every twenty (20) minutes times two (2); then take complete set of vital signs every hour
or as ordered by physician. Vital signs may be taken more frequently as indicated by patient condition.


8. Monitor patient for drug reactions. Predictable drug reactions occur often and are transient with the use of this drug. (Headache, chills, fever, changes in blood pressure, elevated pulse.) Report any drug reactions to Pharmacy.

9. Monitor fluid intake and output every 8 hours. Nausea, vomiting, diarrhea are common side effects. Administer oral/IV fluids, and anti-emetics as ordered.

10. Administer pain medications as ordered. Assist with epidural placement as ordered.

11. Administer additional suppositories as ordered. A whole or half suppository may be ordered per individual dose. This may be given every 3-5 hours. Continuous dosage for more than 2 days is not recommended.

12. Continue to assess family’s need for emotional support during procedure. Contact Bereavement Services counselor as patient advocate.

13. Watch for expulsion of products of conception. Products of conception are often retained. A D & C may be necessary as determined by the physician.

14. Monitor firmness of uterus after delivery or expulsion of contents. The uterus often remains boggy and soft; massage until firm. It may be necessary to use Prostin-E suppository to control postpartum hemorrhage per physician’s order.

Electronic Fetal Monitoring during Induction/Augmentation of Labor:

DEFINITIONS:

1. Uterine Tachysystole
   a. Less than (> 5) contractions in ten (10) minutes, averaged over a 30-minute window.
   b. Characteristics of uterine contractions:
      i. Tachysystole should always be qualified as to the presence or absence of associated FHR decelerations
      ii. The term tachysystole applies to either spontaneous or stimulated labor. The clinical response to tachysystole may differ depending on whether contractions are spontaneous or stimulated.

2. Three-Tier Fetal Heart Rate Interpretation System
   a. Category I FHR tracings include all of the following:
      i. Baseline rate: 110-160 beats per minute
      ii. Baseline FHR variability: moderate
      iii. Late or variable decelerations: absent
      iv. Accelerations: present or absent
b. Category II FHR tracings include all tracings not categorized as Category I or III. Category II tracings may represent an appreciable fraction of those encountered in clinical care. Examples of Category II tracings include any of the following:
   i. Baseline rate
      1). Bradycardia not accompanied by absent baseline variability
      2). Tachycardia
   ii. Baseline FHR variability
      1). Minimal baseline variability
      2). Absent baseline variability not accompanied by recurrent decelerations
      3). Marked variability
   iii. Accelerations
      1). Absence of induced accelerations after fetal stimulation
   iv. Periodic or episodic decelerations
      1). Recurrent variable decelerations accompanied by minimal or moderate baseline variability
      2). Prolonged deceleration > 2 minutes but < 10 minutes
      3). Recurrent late decelerations with moderate baseline variability
      4). Variable decelerations with atypical characteristics

INTERVENTIONS:

1. Category I tracings in the presence of tachysystole:
   a. decrease oxytocin infusion to ½ of its’ current rate or remove cervidil
   b. notify physician
   c. increase IV fluids
2. Category II and III tracings in the presence of tachysystole:
   a. discontinue the oxytocin infusion or remove cervidil
   b. notify physician
   c. Reposition the patient utilizing a lateral position
   d. Administer oxygen via non-rebreather mask at 12 liters/minute if the stress is due to inadequate uteroplacental perfusion
   e. Vary the maternal position if the stress is due to cord compression
   f. Give bolus of IV fluids to enhance uteroplacental perfusion
   g. Consider the use of Terbutaline 0.25 mg subcutaneously
3. Restarting oxytocin:
   a. After discontinuing the Oxytocin infusion, the nurse must obtain an order from the physician stating dose, rate, and interval of increase in order to restart the infusion.
   b. If the oxytocin infusion has been discontinued for less than 20-30 minutes and the FHR is reassuring with normal uterine activity, oxytocin may be restarted with physician’s order at a recommended rate of no more than one-half the rate
that resulted in the non-reassuring FHR and/or uterine tachysystole. Increase infusion 1-2 milliunits/minute every 30-60 minutes.

c. If the oxytocin infusion has been discontinued for more than 30-40 minutes and the FHR is reassuring with normal uterine activity, oxytocin may be restarted with physician’s order at 1 milliunit/minute.

**DOCUMENTATION**

A. Document all assessments/interventions on electronic/unit specific flow sheet.
B. Document all teaching on Multidisciplinary Patient Teaching Record

**REFERENCES:**

St. Francis Hospital and Health Centers, Patient Care Services Policy, Handling and Disposal of Hazardous Material, #400.32


Boys-Fore, Cheryl, MSN, WHNP-BC RNC-OB, Nurse Practitioner, Labor and Delivery, Indianapolis, - January 2009.


Brock, Stephanie, BSN, RN Manager Obstetrics, Mooresville, January 2009.

**NURSING & MEDICAL STAFF COMMITTEE APPROVALS:**

Patient Care Standards Council: - 12/14/04.

Medical Staff PI Committee:  

OB Section Committee: - 01/08/09  

Other: Pharmacy and Therapeutics

*Approved by: ________________________________  (Signed, original policy on file in Nursing Office)*

Susan McRoberts, Vice President  
Chief Nursing Officer

S: INDUCTION LABOR  
11/26/04