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INSTITUTE FOR CLINICAL SYSTEMS IMPROVEMENT

Health Care Order Set:
Admission for Routine Labor

Third Edition
May 2009

The information contained in this ICSI Health Care Order Set is intended primarily for health professionals and the following expert audiences:

- physicians, nurses, and other health care professional and provider organizations;
- health plans, health systems, health care organizations, hospitals and integrated health care delivery systems;
- health care teaching institutions;
- health care information technology departments;
- medical specialty and professional societies;
- researchers;
- federal, state and local government health care policy makers and specialists; and
- employee benefit managers.

This ICSI Health Care Order Set should not be construed as medical advice or medical opinion related to any specific facts or circumstances. If you are not one of the expert audiences listed above you are urged to consult a health care professional regarding your own situation and any specific medical questions you may have. In addition, you should seek assistance from a health care professional in interpreting this ICSI Health Care Order Set and applying it in your individual case.

This ICSI Health Care Order Set is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. An ICSI Health Care Order Set rarely will establish the only approach to a problem.

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Work Group Leader
Douglas Creedon, MD
OB/Gyn, Mayo Clinic

Work Group Members
Family Medicine
Leslie Atwood, MD
Allina Medical Clinic
Lori Bates, MD
Mayo Clinic
Dana-Rae Barr, MD
Hennepin County Medical Center

Nurse Midwife
Anna Levin, CNM
Park Nicollet Health Services
Cherida McCall, CNM
HealthPartners Medical Group
Ruth Wingeier, CNM
CentraCare

Nursing
Becky Walkes, RN
Mayo Clinic

OB/Gyn
Dale Akkerman, MD
Park Nicollet Health Services

Perinatal Medicine
Leslie Pratt, MD
Park Nicollet Health Services

Facilitators
Linda Setterlund, MA, CPHQ
ICSI
Lynette Wheelock, RN, MS
ICSI

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Foreword

Scope and Target Population

All patients who present in obstetrical labor.

Clinical Highlights and Recommendations

- A complete assessment of the patient, including a review of potential risks in labor should be performed on admission.
- Conduct frequent cervical checks (cervical checks afford the best opportunity to detect labor progress and prevent failure to progress).
- Assure fetal well-being with either intermittent auscultation or continuous electronic fetal heart rate monitoring.

Priority Aims

1. Increase the percentage of women who are assessed for risk status on entry to labor and delivery.

Related ICSI Scientific Documents

Guidelines

- Routine Prenatal Care

Protocols

- Prevention of Unintentionally Retained Foreign Objects

Disclosure of Potential Conflict of Interest

ICSI has adopted a policy of transparency, disclosing potential conflict and competing interests of all individuals who participate in the development, revision and approval of ICSI documents (guidelines, order sets and protocols). This applies to all work groups (guidelines, order sets and protocols) and committees (Committee on Evidence-Based Practice, Cardiovascular Steering Committee, Women's Health Steering Committee, Preventive & Health Maintenance Steering Committee and Respiratory Steering Committee).

Participants must disclose any potential conflict and competing interests they or their dependents (spouse, dependent children, or others claimed as dependents) may have with any organization with commercial, proprietary, or political interests relevant to the topics covered by ICSI documents. Such disclosures will be shared with all individuals who prepare, review and approve ICSI documents.

No work group members have potential conflicts of interest to disclose.

Introduction to ICSI Document Development

This document was developed and/or revised by a multidisciplinary work group utilizing a defined process for literature search and review, document development and revision, as well as obtaining input from and responding to ICSI members.

For a description of ICSI's development and revision process, please see the Development and Revision Process for Guidelines, Order Sets and Protocols at http://www.icsi.org.

Evidence Grading System

A. Primary Reports of New Data Collection:

Class A: Randomized, controlled trial

Class B: Cohort study

Class C: Non-randomized trial with concurrent or historical controls
Case-control study
Study of sensitivity and specificity of a diagnostic test
Population-based descriptive study

Class D: Cross-sectional study
Case series
Case report

B. Reports that Synthesize or Reflect Upon Collections of Primary Reports:

Class M: Meta-analysis
Systematic review
Decision analysis
Cost-effectiveness analysis

Class R: Consensus statement
Consensus report
Narrative review

Class X: Medical opinion

Citations are listed in the guideline utilizing the format of *(Author, YYYY [report class])*. A full explanation of ICSI's Evidence Grading System can be found at http://www.icsi.org.

Order Set

This order set pertains to those orders for routine *obstetrical labor admission and does not include preoperative and screening orders from the physician's office. For initial determination of active labor, see the ICSI Management of Labor guideline Annotation #5.*

Legend:
- ☐ Open boxes are orders that a clinician will need to order by checking the box.
- ☑ Pre-checked boxes are those orders with strong supporting evidence and/or regulatory requirements that require documentation if not done. (*See Annotation #1)*

Patient Information *(Two are required.)*

Last name: _____

First name: _____

Date of birth: ___/___/_____

Patient's age: _____

ID #: _____

Admit/Attending Information *(See Annotation #2)*

Admit unit: _____

Attending physician: _____

How to contact: _____

CNM: _____

Diagnosis

Admitting Dx: _____

- ☐ Active labor
- ☐ Contractions
- ☐ Other

Secondary Dx: _____

E.D.D. _____/_____/_____ Wk. Gest._____ Gravida _____ Para _____

Condition

☐ Stable ☐ Other _____

Vitals

☐ Routine (as defined by institution) ☐ every _____ hour

☐ **Notify physician/CNM** if temperature exceeds _____ C^o (_____ F^o)

Patient weight: _____kg

Patient height: _____cm

Activity

☐ Activity (encourage movement, shower, rocker, birth ball) as tolerated

☐ Bathroom privileges with assist as needed

☐ Strict bed rest, encourage lying on side

Allergies and Adverse Drug Reactions

☐ None
☐ Yes, Name: _____ Type of reaction: _____
_____ Type of reaction: _____
_____ Type of reaction: _____

Nursing *(See Annotation #3)*

For supportive care, use standard nursing protocols.
☐ Catheterize bladder as needed for bladder distention or inability to void.

Initial Assessment *(Perform and document risk assessment)*

☑ Baseline electronic fetal monitoring strip.
☑ **Notify physician/CNM** of any non-reassuring fetal heart rate.
☑ Patient assessment (according to hospital protocol)
☐ Cervical exam: dilation, effacement, station, ROM, clarity of fluid, fetus presentation
☑ Prenatal risk review
☑ Risk in labor review

Subsequent Monitoring *(Perform and document risk assessment)*

☐ Nurse auscultation during and for 30 seconds after one contraction every 30 minutes during the active phase of the first stage and every 15 minutes during the second stage of labor (indicated for low-risk situations)
☐ Electronic fetal monitoring (continuous or intermittent) per hospital protocol
☐ Continuous electronic monitoring (indicated for high risk situations)
☑ **Notify physician/CNM** whenever the fetal heart rate tracing is either unclear or predictive of fetal acidemia.

Active Labor Progress

☐ Nurse to check and document progress of labor (dilation, effacement, and station) by frequent cervical checks every _____ hour
☑ **Notify physician/CNM** if dilation increases less than 1 cm/hour for two consecutive hours.

Diet

☐ as tolerated ☐ nothing by mouth ☐ diabetic ☐ ice chips only ☐ clear liquids

IVs

☐ Establish IV saline lock with flush
☐ IV D5LR at _____ mL/hour
☐ IV lactated ringers at _____ mL/hour (*for diabetic patients*)
☐ Other: _____ at _____ mL/hour

Sedative/Symptom Medication

Pain relief

☐ Nalbuphine hydrochloride (Nubain®) _____ mg every _____ hour(s) by ☐ IM ☐ IV
☐ Butorphanol tartrate (Stadol®) _____ mg every _____ hour(s) by ☐ IM ☐ IV
☐ Fentanyl _____ mcg every _____ hour(s) by ☐ IM ☐ IV
☐ Epidural anesthesia (separate order per hospital protocol)
☐ Intrathecal narcotics (separate order per hospital protocol)
☐ Have available local anesthetic (per hospital protocol) for episiotomy/laceration repair
☐ Morphine (separate order [per hospital protocol])

Other Medications

☐ Antacid (institutional preference) 30 ml by mouth for GI discomfort. May repeat one dose.
☐ Acetaminophen 325 mg (*1-3 tabs*) by mouth every 6 hours as needed for headache
☐ Diphenhydramine 25 mg by mouth every 4 hours as needed for sleep/pruritus
☐ Hydroxyzine hydrochloride (Vistaril®) _____ mg every _____ hours by ☐ mouth ☐ IM
☐ Sodium phosphate enema as needed for constipation

Antibiotics (*If Group B Strep positive or unknown)*

No allergies
☐ Penicillin G 5 million units with 10 mg Lidocaine per 100 mL piggyback IV load in labor, then 2.5 million units with 10 mg Lidocaine per 100 mL piggyback IV, every 4 hours until delivery (if no Lidocaine allergy)
Penicillin allergy – no anaphylaxis
☐ Cefazolin 2 g IV then 1g every 8 hours until delivery
Penicillin allergy – with anaphylaxis (if organism sensitive to drug)
☐ Clindamycin 900 mg IV every 8 hours until delivery
☐ Erythromycin 500 mg IV every 6 hours until delivery
If resistant or sensitivities unknown
☐ Vancomycin 1 gm every 12 hours until delivery
☐ Other _____ _____ mg every _____ hours until delivery

Lab/Diagnostic Tests

☐ Hemoglobin
☐ Type and Screen
☐ Drug Screen *(obtain consent if necessary)*
If not available from prenatal records:
- ☐ ABO Rh
- ☐ Rubella Antibody, IgG
- ☐ Hepatitis B Surface Antigen
- ☐ Rapid Plasma Reagin (VDRL)
- ☐ Group B Strep test
- ☐ HIV (*obtain consent to test*)

☐ Other tests: _____

Other

Consults

☐ Obstetrical
☐ Surgical
☐ Endocrinology
☐ Neonatology
☐ Pediatrics

Other orders

☐ _____
☐ _____

Authorized Prescriber Signature:_____

Printed Name:_____

Date/Time of Orders:_____/_____/_____ _____:_____

Annotations

1. Pre-Checked Orders

ICSI order sets utilize two types of boxes for orders. One is the open box that clinicians will need to check for the order to be carried out. The second box is a pre-checked box and are those orders that have strong evidence and/or are standard of care and require documentation if the clinician decides to "uncheck" the order.

There is increasing evidence that pre-checked boxes are more effective in the delivery of care than physician reminders, even within the computerized medical record environment *(Dexter, 2004 [A])*. Organizations are recognizing the benefit of using pre-checked boxes for other orders to promote efficiency. Organizations are encouraged, through a consensus process, to identify those orders to utilize pre-checked boxes to increase efficiency, reduce calls to clinicians, and to reduce barriers for nursing and other professionals to provide care that is within their scope.

2. Admitting Data

Patient information would be part of the medical record in electronic ordering. Institutions will need to add this section per their organization's policy.

Physician information would not be necessary in electronic ordering. How to contact would not be actionable in electronic ordering.

3. Nursing

Characteristics of care for a patient at time of admission to labor and delivery include:

- Chart evaluation
- Cervical exam #2
- Appropriate supportive care/comfort measures as per individual provider. May include, but are not limited to PO fluids, fluid balance maintenance, position changes, back rubs, music, ambulation, and tub bath/shower. Management of labor using patient care measures and comfort measures is supported. Documentation of progress of labor using a graphic medium is helpful to patient and staff *(McNiven, 1992 [D]; Radin, 1993 [C])*.
- Adequate pain relief. This includes parenteral analgesics, e.g., nalbuphine hydrochloride (such as Nubain), butorphanol tartrate (such as Stadol) or hydroxyzine hydrochloride (such as Vistaril) or epidural or intrathecal narcotics for patients in active progressing labor (continued dilation of the cervix) *(Clark, 1998 [A]; Halpern, 1998 [M]; Rogers, 1999 [C])*.
- Documentation of progress of labor using a graphic medium (partogram) is started on admission.
- Monitoring of fetal heart rate. (See Intrapartum Fetal Heart Rate [FHR] Management algorithm and annotations in the Management of Labor guideline.)
- Amniotomy unless contraindicated. Amniotomy should be done early in labor unless spontaneous rupture has occurred or contraindications are present. Early amniotomy has been shown to be associated with a decrease in duration of labor and is part of the failure to progress protocol *(Brisson-Carroll, 1996 [M]; Fraser, 1993 [A]; Garite, 1993 [A])*.

Contraindications for amniotomy include:

- Presentation unknown, floating or unstable
- Cervix dilated less than 3 cm
- Patient refuses

Continuous Electronic Fetal Heart Rate or Monitoring Intermittent Auscultation

The established purpose of fetal heart rate (FHR) monitoring is to identify fetal hypoxemia and acidemia so timely intervention can prevent fetal morbidity and mortality. This is based on the rationale that FHR patterns are indirect markers for hypoxemia and acidemia since the central nervous system controls heart rate. Virtually all obstetrical organizations advise monitoring the FHR during labor, although no trials have compared FHR monitoring versus no monitoring *(Freeman, 2002 [R])*. The most common methods of FHR monitoring are continuous electronic FHR monitoring (EFM) and intermittent auscultation. EFM can be done with an external cardiotocography monitor or an internal (scalp) lead and can provide a continuous assessment of FHR variability and any changes from the baseline heart rate (see table of interpreting FHR monitoring). Intermittent auscultation consists of auscultating FHR with either a DeLee stethoscope or a Doppler probe for 30 seconds immediately following a contraction. This monitoring must be performed every 30 minutes during Stage I of labor and every 15 minutes during Stage II *(American College of Obestetrics and Gynetcolgists, The, 2005 [R])*.

Analysis of data from randomized trials comparing these two techniques shows:

- No difference in the rate of intrapartum fetal death rate (approximately 0.5 per 1,000 births with either approach)
- No difference in APGAR scores and NICU admissions
- Neither approach has resulted in a reduction in cerebral palsy or incidence of infant neurologic impairment

Several advantages to EFM have been demonstrated, including a reduction in neonatal seizures *(Alfirevic, 2006 [M])* and better prediction of fetal acidemia at birth *(Vintzileos, 1993 [A]; Vintzileos, 1995 [M])*. One disadvantage to EFM is that it leads to higher assisted deliveries and Caesarean births without an associated neonatal benefit *(Alfirevic, 2006 [M])*. Compared to intermittent auscultation, EFM is associated with a twofold increase in Caesarean birth rate for non-reassuring FHR patterns.

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The next scheduled revision will occur within 24 months.

Original Work Group Members

The Management of Labor guideline is the result of merging the Preterm Birth Prevention (Preterm), Intrapartum Fetal Heart Rate Monitoring (IFHRM), The Prevention, diagnosis and Treatment of Failure to Progress in Obstetrical Labor (FTP), and Vaginal Birth after Caesarean (VBAC) guidelines.

Work Group Leaders

John Farr, MD – FTP
OB/Gyn
Twin City OB/Gyn, Ltd.

John Hering, MD – VBAC
Obstetrician
Group Health, Inc.

Peter Mark, MD – Preterm
OB/Gyn
HealthPartners

Leslie Pratt, MD – Preterm
OB/Gyn
HealthSystem Minnesota

Deborah Thorp, MD – IFHRM
OB/Gyn
Park Nicollet Medical Center
Business Health Care Action Group

Kathy Halvorsen, RN – VBAC
Honeywell Inc.

Terry Kent, RN, MS – Preterm
Honeywell, Inc.

Marcia McCarty – FTP
Target Stores

Anne Widtfeldt – IFHRM
Honeywell, Inc.

Health Education

Dianne Eggen, RN, MPH – Preterm
HealthPartners

Family Practice

Greg Angstman, MD – IFHRM
Mayo Clinic

Andy Bock, MD – FTP
Mayo Clinic

Donald Lum, MD – VBAC
River Valley Clinic of Northfield

Carol Stark, MD
MinnHealth Family Physicians

Nurse Midwife

Sandy Lindell – IFHRM
Twin City OB/Gyn, Ltd.

Debra Monson, CNM – VBAC
Twin City OB/Gyn, Ltd.

Mary Jo Rourke, CNM – FTP
Group Health, Inc.

Nurse Practitioner

Julie Rice, RN, NP – Preterm
HealthSystem Minnesota

OB/GYN

Dale Akkerman, MD – VBAC
Park Nicollet Medical Center

John Hachiya, MD – FTP
Park Nicollet Medical Center

Javed Malik, MD – FTP
Group Health, Inc.

Paul Ogburn, MD – VBAC, Preterm
Mayo Clinic

Charles Stegeman, MD – IFHRM
Group Health, Inc.

John Underwood, MD – IFHRM
Coon Rapids Medical Center

Measurement Advisor

Rick Carlson – FTP, IFHRM, VBAC
Group Health, Inc.

Leif Solberg, MD – Preterm
Group Health Foundation

Facilitators

Katie Conlin, RN, MPH – VBAC
Group Health, Inc.

Stacie Emberley, RN – VBAC
ICSI

Brenda Gorder, RN – FTP
Group Health, Inc.

Jackie Rikhus, RN – Preterm
ICSI

Contact ICSI at:
8009 34th Avenue South, Suite 1200; Bloomington, MN 55425; (952) 814-7060; (952) 858-9675 (fax)
Online at http://www.ICSI.org

Brief Description of Evidence Grading

Individual research reports are assigned a letter indicating the class of report based on design type: A, B, C, D, M, R, X.

A full explanation of these designators is found in the Foreword of the guideline.

References

Alfirevic Z, Devane D, Gyte GML. Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour (review). *The Cochrane Library* 2009, Issue 1. (Class M)

American College of Obstetricians and Gynecologists, The, and American Academy of Pediatrics. *In* Guidelines for Perinatal Care, 6th ed. Washington DC: American College of Obstetricians and Gynecologists, The and AAP. 2008;139-59. (Class R)

Brisson-Carroll G, Fraser W, Breart G, et al. The effect of routine early amniotomy on spontaneous labor: a meta-analysis. *Obstet Gynecol* 1996;87:891-96. (Class M)

Clark A, Carr D, Loyd G, et al. The influence of epidural analgesia on Caesarean delivery rates: a randomized, prospective clinical trial. *Am J Obstet Gynecol* 1998;179:1527-33. (Class A)

Dexter PR, Perkins SM, Maharry KS, et al. Inpatient computer-based standing orders vs physician reminders to increase influenza and pneumococcal vaccination rates: a randomized trial. *JAMA* 2004;292:2366-71. (Class A)

Fraser WD, Marcoux S, Moutquin JM, et al. Effect of early amniotomy on the risk of dystocia in nulliparous women. *N Engl J Med* 1993;328:1145-49. (Class A)

Freeman RK. Problems with intrapartum fetal heart rate monitoring interpretation and patient management. *Obstet Gynecol* 2002;100:813-26. (Class R)

Garite TJ, Porto M, Carlson NJ, et al. The influence of elective amniotomy on fetal heart rate patterns and the course of labor in term patients: a randomized study. *Am J Obstet Gynecol* 1993;168:1827-32. (Class A)

Halpern SH, Leighton BL, Ohlsson A, et al. Effect of epidural vs parenteral opioid analgesia on the progress of labor. *JAMA* 1998;280:2105-10. (Class M)

Haverkamp AD, Thompson HE, McFee JG, Cetrulo C. The evaluation of continuous fetal heart rate monitoring in high-risk pregnancy. *Am J Obstet Gynecol* 1976;125:310-21. (Class A)

McNiven P, Hodnett E, O'Brien-Pallas LL. Supporting women in labor: a work sampling study of the activities of labor and delivery nurses. *Birth* 1992;19:3-9. (Class D)

Radin TG, Harmon JS, Hanson DA. Nurses' care during labor: its effect on the Caesarean birth rate of healthy, nulliparous women. *Birth* 1993;20:14-21. (Class C)

Rogers R, Gilson G, Kammer-Doak D. Epidural analgesia and active management of labor: effects on length of labor and mode of delivery. *Obstet Gynecol* 1999;93:995-98. (Class C)

Vintzileos AM, Antsaklis A, Varvarigos I, et al. A randomized trial of intrapartum electronic fetal heart rate monitoring versus intermittent auscultation. *Obstet Gynecol* 1993;81:899-907. (Class A)

Vintzileos AM, Nochimson DJ, Guzman ER, et al. Intrapartum electronic fetal heart rate monitoring versus intermittent auscultation: a meta-analysis. *Obstet Gynecol* 1995;85:149-55. (Class M)

This section provides resources, strategies and measurement specifications for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

The subdivisions of this section are:

- Priority Aims and Suggested Measures
  - Measurement Specifications

Priority Aims and Suggested Measures

1. Increase the percentage of women who are assessed for risk status on entry to labor and delivery.

   Possible measures for accomplishing this aim:

   a. Percentage of women who are assessed for risk status on entry to labor and delivery.

Measurement Specifications

Possible Success Measurement #1a

Percentage of women who are assessed for risk status on entry to labor and delivery.

Population Definition

All women who present in labor.

Data of Interest

$$\frac{\text{\# of women who are assessed for risk status on entry to labor and delivery}}{\text{total \# of women whose medical records are reviewed}}$$

Numerator/Denominator Definitions

Numerator: # of women with evidence of assessment for risk status on entry to labor and delivery to include:

- 20-minute fetal heart rate (FHR) assessment,
- patient assessment,
- prenatal risk review, and
- risk in labor assessment.

Denominator: # of women who present in labor.

Method/Source of Data Collection

Any one of several possible data collection methods may be used by the medical group to capture data for this population.

1. Data may be obtained retrospectively by a chart audit (using a minimum sample of 20 charts per month) of all women presenting in labor.
2. Data may be obtained through discharge abstract coding or other data base from the hospital.
3. The hospital may send the medical group a copy of the labor and delivery summary sheet.

Time Frame Pertaining to Data Collection

Suggested time frame for data collection is monthly.

Notes

Risk assessment should be performed on all patients in active labor and is the responsibility of all members of the health care team. That includes, but is not limited to nurses, midwives and physicians.