Welcome!

OPQC Webinar Series Presents:
Antenatal Corticosteroids Treatment
Ohio Perinatal Quality Collaborative
February 10, 2015
February 19, 2015
CME Requirements for Internet-based Activities

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OPQC Continuing Education Program for Level 1 Hospitals in Ohio:
Optimizing Antenatal Corticosteroid Treatment: Improving Outcomes for Preterm Infants

Presenters:
Heather Kaplan, MD, MSCE
Michael Marcotte, MD

Facilitator: Raj Narang
Disclosure: Financial disclosure information (planning committee and presenters): Planning committee members/faculty were determined to have no conflicts of interest pertaining to this activity.

Commercial Support

Commercial support received: None
If at any time during this activity you feel that there has been commercial or promotional bias, please indicate on the online evaluation.

Continuing Education

CME:
Cincinnati Children’s Hospital Medical Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Cincinnati Children’s designates this live activity for a maximum of 1.0 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
Objectives:

- Discuss the effect of ANCS administration to decrease respiratory, gastrointestinal and neurologic sequela in preterm infants from 24 to 33 weeks gestation.
- Describe effective interventions for early identification of ANCS candidates.
- Discuss strategies to administer ANCS in a timely and efficient manner.

Hardware/Software Requirements:
Compatible with Mac and Window users and common web browsers. High-speed access recommended though not required (responsiveness may be noticeably slower using dial-up connection).
Adobe Flash Player 9.x is required and Speakers/headphones required to listen to audio

Provider Contact Information:
If you should have any questions about the content of the meeting, please contact Dr. Heather Kaplan or Dr. Michael Marcotte.
If you should have any questions regarding CME credit, please contact the CME office at cme@cchmc.org.
The OPQC ANCS Project was funded by our partners listed below:
Antenatal Corticosteroids Toolkit: Optimizing Antenatal Use of Steroids to Improve Outcomes for Preterm Infants

Michael Marcotte, MD
Good Samaritan Hospital

Heather Kaplan, MD, MSCE
Cincinnati Children’s Hospital Medical Center
Objectives

• Understand the impact of optimizing ANCS rates in order to improve outcomes of infants born preterm

• Review results from Ohio Perinatal Quality Collaborative (OPQC)’s ANCS project

• Introduce the ANCS Toolkit

• Understand how the resources provided in the ANCS Toolkit can help you improve ANCS administration at your hospital.
Optimizing ANCS Treatment: Improving Outcomes for Preterm Infants

• ANCS is well-established and widely endorsed practice used to improve outcomes for preterm infants.

• ANCS has a protective effect on the lungs, brains, and intestinal tracts of preterm infants.

• ANCS specifically helps reduce:
  – risk of respiratory distress syndrome
  – interventricular hemorrhage
  – serious bowel disease
  – death among preterm infants (<34 weeks gestation)
ANCS Affects

<table>
<thead>
<tr>
<th>Phase</th>
<th>Embryonic</th>
<th>Pseudoglandular</th>
<th>Canicular</th>
<th>Terminal Sac</th>
<th>Alveolar</th>
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<tr>
<td>Gestation (wks)</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>16</td>
<td>25</td>
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<td>Generation (h)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>7</td>
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Conducting Airways
Terminal Respiratory Units

ALVEOLAR LUMEN
- Capillary Lumen with Erythrocytes
- Type I Pneumocyte
- Type II Pneumocyte
- Macrophage
- Subendothelial CT
ANCS Evidence -- Important Years

- 1972—Liggins and Howie
- 1990--Crowley
- 1994—NIH consensus conference
- 2001—Guinn, multi-dose
- 2006—Wapner, Multi-dose
- 2011—ACOG opinion 475
- …ongoing late preterm study MFMU
The ANCS Standard

- **Candidates**: women likely to deliver viable, preterm infants (24-34 weeks gestation) within seven days.

- American College of Obstetricians and Gynecologists (ACOG) standard for **first course** of ANCS is:
  - Two doses of betamethasone injected 24 hours apart
  - **OR**
    - Four doses of dexamethasone injected 12 hours apart

- ACOG stated that a **second “rescue” course** of ANCS may be given to pregnant women who:
  1) received a first course more than two weeks earlier
  2) are still less than 33 weeks’ gestation
  3) are expected to deliver within one week
ANCS as a Measure of Hospital Quality

<table>
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<tr>
<th>Set Measure ID</th>
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<tbody>
<tr>
<td>PC-01</td>
<td>Elective Delivery</td>
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<tr>
<td>PC-02</td>
<td>Cesarean Section</td>
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<tr>
<td>PC-03</td>
<td>Antenatal Steroids</td>
</tr>
<tr>
<td>PC-04</td>
<td>Health Care-Associated Bloodstream Infections in Newborns</td>
</tr>
<tr>
<td>PC-05</td>
<td>Exclusive Breast Milk Feeding</td>
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Ohio Hospital Compare (2012)

<table>
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<tr>
<th>Hospital Name</th>
<th>County</th>
<th>Steroid Given to Moms to Help Premature Babies Lungs Development</th>
<th>Rate</th>
<th>Complications Rate</th>
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<tbody>
<tr>
<td>Mount Carmel East</td>
<td>FRANKLIN</td>
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<td>100%</td>
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<td>Mount Carmel St. Ann's</td>
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<td>92/94</td>
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<td>CUYAHOGA</td>
<td></td>
<td>97.4%</td>
<td>76/78</td>
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<td>University Hospital, The</td>
<td>HAMILTON</td>
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<td>220/228</td>
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<td>Mercy St. Vincent Medical Center</td>
<td>LUCAS</td>
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<td>95.9%</td>
<td>47/49</td>
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<td>Grant Medical Center</td>
<td>FRANKLIN</td>
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<td>95%</td>
<td>57/60</td>
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<td>Good Samaritan Hospital</td>
<td>HAMILTON</td>
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<td>94%</td>
<td>235/250</td>
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<td>Aultman Health Foundation</td>
<td>STARK</td>
<td></td>
<td>93.3%</td>
<td>112/120</td>
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<td>Summa Akron City and St. Thomas Hospitals</td>
<td>SUMMIT</td>
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<td>93.2%</td>
<td>110/118</td>
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<td>Riverside Methodist Hospital</td>
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<td>92.9%</td>
<td>157/169</td>
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<td>Miami Valley Hospital</td>
<td>MONTGOMERY</td>
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<td>91.9%</td>
<td>216/235</td>
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<tr>
<td>Fairview Hospital</td>
<td>CUYAHOGA</td>
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<td>90.2%</td>
<td>111/123</td>
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<td>78/87</td>
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<tr>
<td>Akron General Medical Center</td>
<td>SUMMIT</td>
<td></td>
<td>89.6%</td>
<td>86/96</td>
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<tr>
<td>University Hospitals of Cleveland</td>
<td>CUYAHOGA</td>
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<td>88.1%</td>
<td>155/176</td>
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<td>87%</td>
<td>47/54</td>
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<tr>
<td>ProMedica Toledo Hospital</td>
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<td>81.6%</td>
<td>151/185</td>
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<td>The Ohio State University Hospitals</td>
<td>FRANKLIN</td>
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<td>80.4%</td>
<td>275/342</td>
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<td>Ohio Rate</td>
<td></td>
<td></td>
<td>65.8%</td>
<td>2,510/3,814</td>
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</table>

Berean North Hospital                              | HAMILTON   |                                                                | 59.3%| 16/27              |

Mercy Regional Medical Center                      | LORAIN     |                                                                | 0.1% | 1/855              |
Ohio Perinatal Quality Collaborative

- OPQC is a consortium of Ohio perinatal clinicians, hospitals, and policy makers
- **Mission:** Through collaborative use of improvement science methods, to reduce preterm births & improve perinatal and preterm newborn outcomes in Ohio as quickly as possible
- Focus on population health → use of birth registry data
- Key Partners:
  - Ohio Departments of Health and Medicaid
  - Ohio Beacon Council and Ohio Colleges of Medicine Government Resources Center
  - Ohio Hospital Association
  - Centers for Disease Control
OPQC’s ANCS Project

• ANCS Baseline Ohio:
  – Ohio Birth Certificate: 66%
  – Vermont Oxford Hospitals: 80-84%

• Project Aim: To increase the percent of women between 24 $^{0/7}$ weeks and 33 $^{6/7}$ weeks who receive any ANCS prior to delivery.
ANCS Project Methods

Retrospective Chart Review

• 15 Hospitals
• Charts reviewed over a 5 month period
• 466 deliveries from $24^{0/7}$ to $34^{0/7}$ were analyzed
  – 399 (89.5%) received ≥ one dose
  – 47 (10.5%) received NO doses

Prospective ANCS project

• 19 of 20 OPQC Charter members
• Project conducted from November 2011 through June 2013
• Sites used QI methods to optimize rates of ANCS administration
Goal: Assure that all infants born between 24\(^{0/7}\) and 33\(^{6/7}\) weeks’ gestation receive appropriate antenatal corticosteroid treatment to reduce perinatal morbidity and mortality.

Project AIM:
To increase the percentage of infants born in Ohio at 24\(^{0/7}\) to 33\(^{6/7}\) weeks’ gestation who receive pre-delivery ANCS to > 90%, by June 2013

Interventions:
- Create an integrated system of recording ANCS administration among prenatal care sites and delivery sites encompassing all levels and acuity of care.
- Standardize birth certificate documentation of ANCS administration
- “Choose an ANCS Strategy or Guideline for your site”
- Promote consistent use of common algorithm of ANCS administration for Betamethasone & Dexamethasone
  - Practitioners
    - Prescribing
    - Care Giving / Administering
  - Hospitals
    - Link to maternal transfer & tocolysis
  - Pharmacies
  - Distributors
- Promote public awareness of benefits of ANCS
- Education of parents & non-perinatal providers
- Link to maternal transfer & tocolysis
- General risks and benefits
ANCS Project Results

- Hand Collected Data shows more than 90% of eligible mothers received at least one dose of betamethasone in all subsequent months of the project except January 2013.
ANCS Project Results

- Birth Registry Data now more closely matches hand collected data

Births at 24-33 completed weeks receiving any antenatal steroids, by quarter, Aggregate results for 19 OPQC charter sites

Source: Ohio Department of Health, Vital Statistics
OPQC ANCS Toolkit
ANCS Toolkit Outline

- Created by the Ohio Perinatal Quality Collaborative (OPQC)
- Developed to share successful changes and helpful tools to support hospitals improve/maintain their ANCS rates.
- Provides resources to help:
  - Establish an ANCS documentation system
  - Improve identification of eligible mothers
  - Administer ANCS in a timely and efficient manner
  - Ensure everyone involved is aware of risks & benefits of ANCS
Tools to Optimize ANCS Administration

Conducting Your Own QI Project
Where to start…

• The Model for Improvement asks three key questions:
  
  1) **Aim:** What are we trying to accomplish?
  
  2) **Measurement:** How will we know that a change is an improvement?
  
  3) **Changes:** What change can we make that will result in improvement?

• Tool #1 will help you identify best strategies to:
  
  – Assure that accurate systems are in place to identify candidates for treatment
  
  – Assure documentation of prescription and receipt of ANCS by perinatal caregivers
**Global Aim:** Assure that all infants born between 24 0/7 and 33 6/7 weeks’ gestation receive appropriate antenatal corticosteroid treatment to reduce perinatal morbidity and mortality.

**Key Drivers**

- Documentation System
- Identification of Appropriate ANCS Candidate
- Identification of Appropriate Time for ANCS Administration
- Optimal and Efficient Administration of ANCS
- Awareness of Benefits and Risks

**Interventions**

- Create an integrated system of recording ANCS administration among prenatal care sites and delivery sites encompassing all levels and acuity of care.
- Standardize birth certificate documentation of ANCS administration
- Choose an ANCS Strategy or Guideline for your site
- Promote consistent use of common algorithm of ANCS administration for Betamethasone & Dexamethasone
  - Practitioners
    - Prescribing
    - Care Giving/Administering
  - Hospitals
    - Link to maternal transfer & tocolysis
    - Pharmacies
    - Distributors
    - Pharmaceutical Manufacturers
- Promote public awareness of benefits of ANCS
- Education of parents & non-perinatal providers
- Link to maternal transfer & tocolysis
- General risks and benefits
Measurement

• A key part of any effort to optimizing ANCS treatment is knowing your hospital’s rates of administration!

• How can you assess your hospital’s rate of administration?
  – Collect your own data
  – State vital statistics (birth registry) data
  – Joint Commission Perinatal Core Measures Set
  – Vermont Oxford Network registry (for participating hospitals)
• Used to evaluate all births before 34 weeks’ gestation to determine whether the mother received ANCS.

• Tool #2 helps hospitals to:
  – Track their rates of ANCS administration
  – Understand the characteristics of their patient population
  – Understand whether women are receiving a full (vs. partial) course of steroids
  – Understand data about the time interval from administration to delivery

• You can also track your hospital’s rates of ANCS administration from state vital statistics.
**DATA COLLECTION FORM: OPQC: ANTENATAL CORTICOSTEROIDS (ANCS) USE**

- Complete a form for ALL infants at or between 24\(\text{th}\) weeks and 33\(\text{rd}\) weeks gestational age at delivery
- Do Not complete a form if infant was < 24\(\text{th}\) weeks or > 33\(\text{rd}\) weeks gestational age at delivery
- If the delivery is of multiples, please complete 1 form for each baby delivered

1. Gestational age at delivery: _____ weeks _____ days
2. Birth weight: ________ lbs. _________ oz. OR ________ grams
3. Is this a multiple birth?
   - Yes
   - No (skip to Question 8)
4. If this is a multiple birth – please indicate the number of fetuses. _________ (whole number only)
5. How was gestational age determined?
   - Ultrasound <= 20 weeks
   - Ultrasound > 20 weeks
   - Other ____________________________
6. What date/time did the mother arrive at the delivering hospital?
   - Date: _________ (mm/dd/yyyy)
   - Time: _________ (HH:MM) (24 hr. clock)
7. Were membranes ruptured prior to arrival at the delivering hospital?
   - Yes
   - No
8. What date and time was the baby born?
   - Date: _________ (mm/dd/yyyy)
   - Time: _________ (HH:MM) (24 hr. clock)
9. What was the reason for preterm birth?
   - PTL
   - PPROM
   - Bleeding (any cause or diagnosis)
   - High blood pressure (any cause or diagnosis)
   - Other: ___________________________

**Steroid (ANCS) Administration**

10. What type of ANCS medication was given?
   - Betamethasone
   - Dexamethasone (skip to Question 12)
   - No ANCS medication given 3TOP
11. How many doses of Betamethasone were administered at any time by any provider prior to delivery?
    (1 dose = 1 injection of betamethasone)
    - Zero
    - One
    - Two
    - Three or more
    - Can’t determine
12. How many doses of Dexamethasone were administered at any time by any provider prior to delivery?
    (1 dose = 1 injection of dexamethasone)
    - Zero
    - One
    - Two
    - Three
    - Four
    - Five or more
    - Can’t determine
13. What date & time did the mother receive her first dose of steroids?
    - Date: _________ (mm/dd/yyyy)
    - Time: _________ (HH:MM) (24 hr. clock)
    - Can’t determine date
    - Can’t determine time
14. Where was the 1st dose of steroids given?
    - Referring Hospital
    - Delivery Hospital
    - Clinic or Doctor’s office
    - Emergency Dept
    - Can’t determine
15. Where were subsequent doses of steroids given?
    (Check all that apply)
    - Referring Hospital
    - Delivery Hospital
    - Clinic or Doctor’s office
    - Emergency Dept
    - Can’t determine
16. What date & time did the mother receive her last dose of steroids?
    - Date: _________ (mm/dd/yyyy)
    - Time: _________ (HH:MM) (24 hr. clock)
    - Can’t determine date
    - Can’t determine time
17. How many courses of ANCS did the mother receive in the pregnancy?
   *Full course = 2 injections of betamethasone or 4 injections of dexamethasone*
   - Did not receive steroids
   - Part of 1 Course
   - 1 Course
   - 2 Courses
   - More than 2 Courses
   - Can’t determine
Establishing an ANCS Documentation System
Establishing an ANCS Documentation System

• If it’s not documented, it’s not done!

• Establishing an ANCS Documentation System is crucial to improving ANCS treatment rates
  – Helps ensure that needed treatment is not missed or that too many doses of ANCS are not given
  – Improves the accuracy of state vital statistics records of prenatal care which are used for quality measurement and to make decisions about public policy
Establishing an ANCS Documentation System

- Issues with documentation have included:
  - Variation in the location of ANCS documentation within charts
  - Variation in the way the steroids were identified in the charts
  - Hospital charts often do not reflect when ANCS has been administered at a previous location

- Issues with variable documentation also led to inaccurate documentation in other sources (e.g., state birth registry)
Changes to Improve Documentation:

- Standardizing ANCS reporting within medical records
- Giving birth registry staff access to all pertinent sections
- Education birth registry staff on medical terminology
- Increasing communication between clinical staff and birth registry staff
- Auditing birth registry data for accuracy
Changes to Improve Birth Registry Accuracy:

TOOL #3: FLOWCHART FOR BIRTH REGISTRY STAFF

- Created to understand how clinical and birth registry staff visualize their present system of ANCS administration

- Tool #3 helps you:
  - Identify the sequence of events in a process
  - Have a team come to an agreement on the steps of a process and what activities may impact its performance
FLOW CHART FOR BIRTH REGISTRY STAFF
Accurate Birth Registry Documentation of ANCS Administration

Begin

Meet as a team

Review guide to completing the facility worksheet

Identify clinical resource person(s) for clerical questions

Assemble pertinent data for data abstraction

Is OB estimate of Gestational Age 34 - 40 weeks?

Was ANCS given to the mother before transport to your facility?

Was mother transferred to your facility from another facility?

Was ANCS given during hospitalization?

Document accurate ANCS status in birth registry.

Is OB estimate of Gestational Age 24 - 33 weeks?

Did mother have any previous admissions to any hospital during this pregnancy?

Document accurate ANCS status in birth registry.

Stop. Not an ANCS candidate.

Is OB estimate of Gestational Age less than 24 weeks?

During any previous admissions to any hospital during this pregnancy, was the OB Estimate of Gestational Age 24 - 33 weeks?

Was the medical diagnosis Premature Labor or Premature Rupture of Membranes (PROM; PPROM) or did the mother receive tocolytics?***?

Identify if ANCS was given in this prior hospitalization.

Stop. Not an ANCS candidate.
Optimizing ANCS Administration
Improving Identification of Eligible Mothers

• Correct identification of women eligible to receive ANCS is critical to the treatment’s optimal use

• Interventions that can help ensure that eligible women are appropriately identified include:
  – Empowering nurses to recognize an opportunity to give ANCS
  – Standardizing your hospital’s approach to identifying eligible women and the time frame that indicates “imminent delivery”
  – Standardized communication processes from one hospital to another
• Offers a few examples of standardized forms that can be used at the time of transfer

• Forms are designed to standardized communication.

• Forms should provide a way to consistently and reliably report important clinical information
Referring Hospitals

**NURSING TRANSPORT SBAR**

**Situation**
Patient Name: ___________________________ Referring hospital: __________ Referring physician: ________
Age: _______ Gravida: _______ Para: _______ Gestational Age: _______ Based on: _______ LMP: _______ US:

**Background**
Blood Type and Rh: __________
Allergies: _______________________

Pertinent Information About Current Pregnancy:
- Dilated Cervix: _______ Gestational Diabetes: _______ Maternal Age: _______ Multiples: _______ Other: _______

GASI Status: _______ Positive: _______ Negative: _______ Pending: _______ Unknown: _______
Other relevant history: _______________________

Pertinent Medical History:
- Diabetes: _______ Chronic HTN: _______ Asthma: _______ Thrombophilia: _______ STD: _______ HIV: _______ Other: _______
Medications: _______________________

**Assessment**
Vital Signs: T: _______ P: _______ R: _______ BP: _______
Physical Exam Findings: Pain: _______

Cervix: Dilated: _______ Effacement: _______ Station: _______
Presentation: _______ Vertex: _______ Breach: _______

Transverse Determined by: _______ VE: _______ US:
Membranes: Ruptured: _______ Date: _______ Time: _______
Labor: In Active Labor: _______ Not In Active Labor: _______
Contractions: Frequency: _______ Duration: _______ Intensity: Mild: _______ Moderate: _______ Strong: _______

FHR: _______ Accelerations: _______ Decelerations: _______ Variability: _______
IV: _______ Rate: _______

Amnion--Steroids: Not Indicated: _______
Betamethasone (---mg dose): Date: _______ Time: _______
Betamethasone (---mg dose): Date: _______ Time: _______

Magnesium: Not Indicated: _______
Rashes: _______

Time Completed: _______ Maintenance: Dose: _______ Time Started: _______
Medications given/Time last dose:
1. _______ 2. _______ 3. _______

Diagnostic Tests completed: _______________________

**Recommendation**
Interventions prior to transport:
Copy of prenatal given to team: yes: _______ no: _______

Transferring Nurse Name (Print): _______________________
SBAR Report Given to (Print Receiving RN Name): _______________________

---

**TRANSFER SUMMARY FORM FOR REFERRING HOSPITALS**

**Situation**
Patient Name: ___________________________ Date and Time: _______
Referred Physician/Hospital: _______ Receiving hospital: _______
Reason for transport: _______________________
Age: _______ Gravida: _______ Para: _______ LMP: _______ US:
Expected Time of Arrival: _______ Copy of Prenatal to Receiving Hosp: yes: _______ no: _______

**Background**
Current Pregnancy:
- Dilated Cervix: _______ Gestational Diabetes: _______ Maternal Age: _______ Multiples: _______ Other: _______

GASI Status: _______ Positive: _______ Negative: _______ Pending: _______ Unknown: _______
Other relevant history: _______________________

Pertinent Medical History:
- Diabetes: _______ Chronic HTN: _______ Asthma: _______ Thrombophilia: _______ STD: _______ HIV: _______ Other: _______
Medications: _______________________

**Assessment**
Vital Signs: T: _______ P: _______ R: _______ BP: _______
Physical Exam Findings: Pain: _______

Cervix: Dilated: _______ Effacement: _______ Station: _______
Presentation: _______ Vertex: _______ Breach: _______

Transverse Determined by: _______ VE: _______ US:
Membranes: Ruptured: _______ Date: _______ Time: _______
Labor: Time of Onset: _______ Time: _______
Contractions: Frequency: _______ Duration: _______ Intensity: Mild: _______ Moderate: _______ Strong: _______

FHR: _______ Accelerations: _______ Decelerations: _______ Variability: _______
IV: _______ Rate: _______

Amnion--Steroids: Not Indicated: _______
Betamethasone (---mg dose): Date: _______ Time: _______
Betamethasone (---mg dose): Date: _______ Time: _______

Magnesium: Not Indicated: _______
Rashes: _______

Time Completed: _______ Maintenance: Dose: _______ Time Started: _______
Medications given/Time last dose:
1. _______ 2. _______ 3. _______

Diagnostic Tests completed: _______________________

**Recommendation**
Plan of care/Additional Information:

Transferring Nurse (Print): _______________________
SBAR Report Given to Receiving Nurse (Print): _______________________

---
## PHYSICIAN TRANSPORT INTAKE FORM

### Situation
- Patient Name: ____________________________
- Date of Hospital Admission: _____________
- Referring OB: ____________________________
- Referring Hospital: _______________________
- Age: _______ Gravida: _______ Para: _______ Gestation: _______
- Current Situation:

### Background
- Pertinent Information About Current Pregnancy:
  - PTL
  - P.P.O.M.
  - Preeclampsia
  - Gestational Hypertension
  - Bleeding
  - Previa
  - IUGR
  - Oligohydramnios
  - Gestational Diabetes
  - Hypermelis
  - Multiples
  - Other: _____________________________
- GBS Status:  
  - Positive
  - Negative
  - Pending
  - Unknown
- Blood Type and Rh: _______
- Allergies: ___________________________
- Other Relevant History:

### Assessment
- Vital Signs: T__________ P__________ R__________ BP__________
- Physical Exam Findings: 
  - Bleeding
  - Cervix: Dilatation: _______ Effacement: _______ Station: _______ Defected
  - Presentation: _______ Breach
  - Transverse
  - Determined by: _____ VE _____ US
- Membranes:  
  - intact
  - ruptured
- Labor:  
  - In Active Labor
  - Not In Active Labor
- Contractions: Frequency: _______ Duration: _______ Intensity: _______
- FHR:  
  - Accels
  - Decels
  - Variability
- Medications given:
  - 1. __________________________
  - 2. __________________________
  - 3. __________________________
  - Labs drawn:
    - Diagnostic Tests completed

### Recommendation
- Transport Plan:  
  - Air Transport
  - Ground Transport
- Interventions Prior to Transport:
  - Airway: _______ Stable
  - Breathing: _______ Stable/Room Air
  - Nasal Cannula
  - Intubation/ Ventilation
  - Circulation: _______ Stable
  - LIVING bolus
  - MPRC
  - Pressures
  - Antenatal bedside: _______ Already Given
  - To Be Given Prior to Transfer
  - Not Indicated
  - Magnesium: _______ Already Started
  - To Be Started Prior to Transfer
  - Not Indicated
  - IV Access: _______ Established
  - Not Established, Recommend: __________________________
- Admit to:  
  - ICU
  - Labor & Delivery
  - Ambulance
  - ED
- Signature: ____________________________
Timely and Efficient Administration of ANCS

• Hospitals with high-rates of ANCS administration tend to emphasize reliability and efficiency by:
  
  – Using reminders (e.g., posted signs, to heighten urgency for administration)
  
  – Making ANCS readily available by stocking it on the unit or having a special system in place to consistently ensure a rapid response from pharmacy
  
  – Ensuring that the appropriate clinicians are available to assess the pregnant woman in preterm labor in a timely manner
Raising Awareness of Risks & Benefits

• In hospitals with high-rates of ANCS administration, all members of the care team know about the benefits of ANCS so that everyone can watch for the opportunity to administer, including:
  – Physicians
  – Nurses
  – Trainees
  – Patients
Building a “High Reliability” Culture

• In hospitals with high-rates of ANCS administration, all members of the care team are extra vigilant about ANCS,

• Care providers have a “pre-occupation” with failure
  – “…from a process improvement standpoint, I think in the instances where I've been involved in a team that has failed to get them on board or you know, felt frustration about that…”

• These hospitals are always on the look out for missed opportunities and formally review the causes of missed cases
Reliability

- Definition of “Reliability” for Health Care– The capability of a process, procedure or health service to perform its intended function in the required time under existing conditions (Institute for Health Care Improvement)

- Our goal is to ensure that the right thing happens **every time** because our practice has the systems in place to accomplish our goals.

**Bottom line:** This is NOT about working harder
<table>
<thead>
<tr>
<th>Level of Reliability (Process Performance)</th>
<th>Activities to Achieve Desired Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1 (10^{-1})</strong>&lt;br&gt;• 80-90%&lt;br&gt;• 1-2 failures out of 10</td>
<td>• Team focus on outcome goal&lt;br&gt;• Feedback of information&lt;br&gt;• Awareness and training&lt;br&gt;• Standardize decision-making (e.g. guidelines)&lt;br&gt; Intent, Vigilance and Hard Work</td>
</tr>
<tr>
<td><strong>Level 2 (10^{-2})</strong>&lt;br&gt;• 95-99%&lt;br&gt;• &lt;5 failures out of 100</td>
<td>• Checklists&lt;br&gt;• Redundancy&lt;br&gt;• Real time identification of failures&lt;br&gt;• Make the right thing easy to do&lt;br&gt;• Standardize process&lt;br&gt; Use of Reliability Science &amp; Human Factors</td>
</tr>
<tr>
<td><strong>Level 3 (10^{-3})</strong>&lt;br&gt;• 99.5-99.9%&lt;br&gt;• &lt;5 failures out of 1000</td>
<td>• Mindfulness, Take advantage of habits&lt;br&gt;• Pre-occupation with failure&lt;br&gt;• Resilience&lt;br&gt;• Deference to expertise (Avoid “Top Down” Culture)&lt;br&gt;• System is visible&lt;br&gt;• Standardize behavior&lt;br&gt; High Reliability Organizations</td>
</tr>
</tbody>
</table>
Building a “High Reliability” Culture

- These hospitals are always on the lookout for missed opportunities and formally review the causes of missed cases
  - “We always wrote off, didn't get steroids because there wasn't time. But as we started looking in individual cases…it became clear that there were other issues and that there often was time we just didn't think about it.”
  - “You have a sense of what you’re doing, then you really have to look at what are you actually doing to see where the problems are. So, I don't think we would have tumbled on to some of the things that we did without looking at where we were missing.”
• Tracks the causes of missed opportunities to administer ANCS.

• Will help you reduce the gap between eligible women who receive ANCS and those who do not.
"When we missed a dose, I go back and look at why we missed a dose. And those cases go to our OB QA. To review how can we improve on that."

"And one of our misses was a woman, again, precipitous labor, who came from one of our [system] hospitals. We review, had QA, so we've been reaching out to their ED to make sure they have the Betamethasone in their medication dispensing area as well. So, we're finding things as we do the huddles."
TRACKING MISSED ANCS OPPORTUNITIES

In order to identify common clinical and systems issues preventing greater than 90% of identified women who may benefit from receiving ANCS from actually receiving ANCS, teams should pay attention to specific reasons in their hospitals that these opportunities may have been missed. Teams can use a CSI or Corticosteroid Investigation form to record these reasons. By recording and tracking the reasons for these gaps or misses, all teams can learn and improve.

OPQC “Corticosteroid Investigation”

Hospital: _______________________

Date of Delivery: ______________  Time of Delivery: _______________________

Check one of the reasons the patient did not receive ANCS.

☐ Short Interval from Presentation to Delivery
  ☐ Interval < 2 hrs
  ☐ Interval < 2 hr expected
  ☐ Evaluation Delayed

☐ Admitted with working diagnosis not expected to result in early delivery but condition rapidly changed

☐ ANCS not given at referring hospital before transfer

☐ ANCS not ordered, or ordered but not given (System Failure)

☐ Not Eligible for ANCS

☐ Prenatal Diagnosis of Lethal anomalies (e.g., renal agenesis)

☐ Steroids intentionally withheld due to documented medical reason (e.g., rule out sepsis evaluation)

☐ Gestational age < 24 or > 34 weeks.
### OPQC “Mind the Gap”

<table>
<thead>
<tr>
<th>Description</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td># of patients who did not get ANCS</td>
<td>283</td>
</tr>
<tr>
<td># of patients with “CSI” (4/2012 through 3/2013)</td>
<td>149</td>
</tr>
<tr>
<td>Reasons for not receiving ANCS prior to delivery</td>
<td></td>
</tr>
<tr>
<td>Short Interval from Presentation to Delivery (interval &lt; 2 hrs)</td>
<td>108 (72%)</td>
</tr>
<tr>
<td>ANCS not given at referring hospital</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Admit Dx not expected to deliver but condition rapidly changed</td>
<td>15 (10%)</td>
</tr>
<tr>
<td>Maternal medical complication</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Not ordered, or ordered but not given (Systems Failure)</td>
<td>6 (4%)</td>
</tr>
<tr>
<td>Infant delivered at 32-34 wks and mom with PROM</td>
<td>7 (5%)</td>
</tr>
<tr>
<td>Prenatal Dx of lethal anomaly</td>
<td>8 (5%)</td>
</tr>
</tbody>
</table>
Toolkit Available at...

https://www.opqc.net/projects/OB-ANCS

Toolkit Supported by...
Next Frontiers

“It’s not just we need to give more people steroids….we need to detect earlier people that need it.” Nurse

• Even though ANCS administration rates are high, there are opportunities to improve including:
  – Access to care
  – Patient awareness of signs and symptoms of preterm birth
  – Better recognition of women at risk (history of preterm birth, symptoms of PEC, etc.)
• We need to find women sooner and proactively anticipate those with a high risk of delivery in 7 days
Questions?