

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.





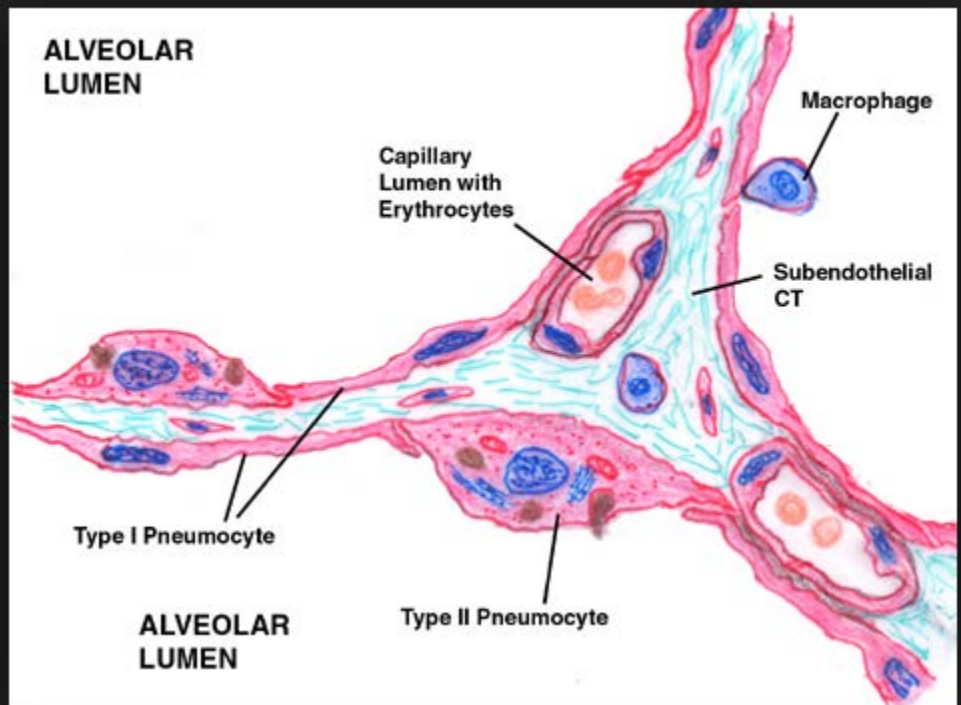
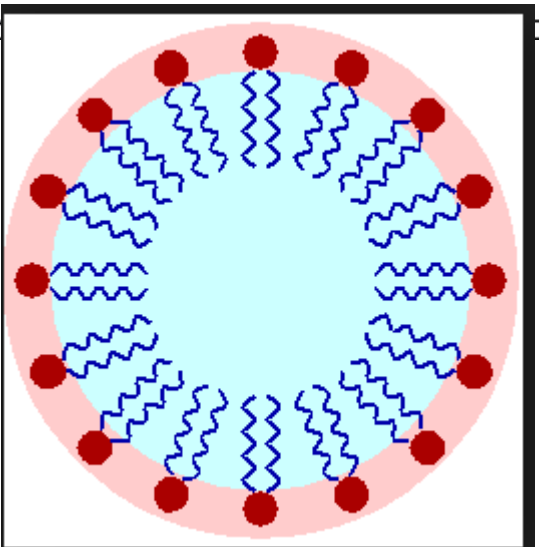
Optimizing ANCS Treatment: Improving Outcomes for Preterm Infants

- 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)



Phase	Embryonic	Pseudoglandular	Canalicular	Terminal Sac	Alveolar
Gestation (wks)	0 → 5	6 → 16	17 → 24	25 → 37	37+
Generation (n)	0	1 2	7 8 9 20	21 → 23	24 25 26 27
Trachea Bronchi			Nonrespiratory bronchioles		
			Respiratory bronchioles		Alveolar ducts
Conducting Airways			Terminal Respiratory Units		

ANCS Affects



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



Set Measure ID	Measure Short Name
PC-01	Elective Delivery
PC-02	Cesarean Section
PC-03	Antenatal Steroids
PC-04	Health Care-Associated Bloodstream Infections in Newborns
PC-05	Exclusive Breast Milk Feeding



Ohio Hospital Compare (2012)

Information

ⓘ Steroids given to moms to help premature babies lungs development

Higher is better



Mount Carmel East	(FRANKLIN)		100%	55/55
Mt. Carmel West	(FRANKLIN)		100%	42/42
Mount Carmel St. Ann's	(FRANKLIN)		97.9%	92/94
MetroHealth Medical Center	(CUYAHOGA)		97.4%	76/78
University Hospital, The	(HAMILTON)		96.5%	220/228
Mercy St. Vincent Medical Center	(LUCAS)		95.9%	47/49
Grant Medical Center	(FRANKLIN)		95%	57/60
Good Samaritan Hospital	(HAMILTON)		94%	235/250
Aultman Health Foundation	(STARK)		93.3%	112/120
Summa Akron City and St Thomas Hospitals	(SUMMIT)		93.2%	110/118
Riverside Methodist Hospital	(FRANKLIN)		92.9%	157/169
Miami Valley Hospital	(MONTGOMERY)		91.9%	216/235
Fairview Hospital	(CUYAHOGA)		90.2%	111/123
St. Elizabeth Health Center	(MAHONING)		89.7%	78/87
Akron General Medical Center	(SUMMIT)		89.6%	86/96
University Hospitals of Cleveland	(CUYAHOGA)		88.1%	155/176
Charles F. Kettering Mem. Hospital	(MONTGOMERY)		87%	47/54
ProMedica Toledo Hospital	(LUCAS)		81.6%	151/185
The Ohio State University Hospitals	(FRANKLIN)		80.4%	275/342
Ohio Rate			65.8%	2,510/3,814
Bethesda North Hospital	(HAMILTON)		59.3%	16/27
Mercy Regional Medical Center	(LORAIN)		0.1%	1/855



OPQC ANCS Project

Ohio Perinatal Quality Collaborative

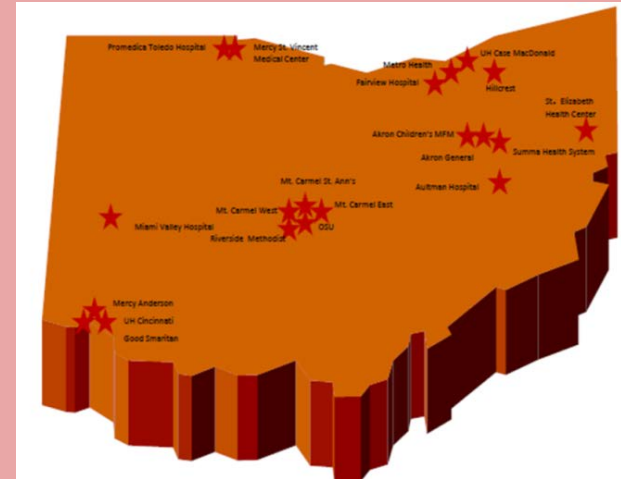
- OPQC is a consortium of Ohio perinatal clinicians, hospitals, and policy makers
- **Mission:** Through collaborative use of improvement science methods, to reduce preterm births & improve perinatal and preterm newborn outcomes in Ohio as quickly as possible
- Focus on population health → use of birth 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.

20 Charter Hospitals
49% of Ohio Births



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 \geq 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.

Interventions

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

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

- 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"

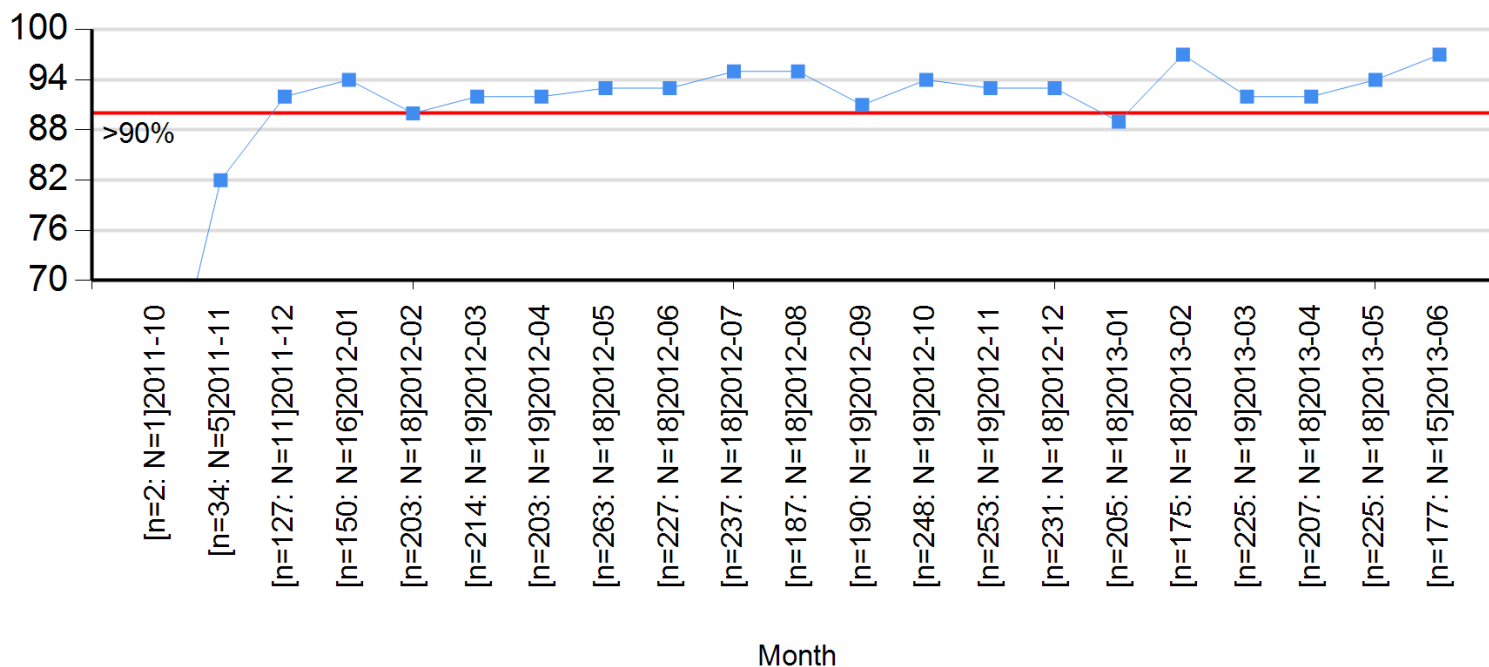
- Promote consistent use of common algorithm of ANCS administration for Betamethasone & Dexamethasone
 - Practitioners
 - Prescribing
 - Care Giving / Administering
 - Hospitals
 - Link to maternal transfer & tocolysis
 - Pharmacies
 - Distributors

- 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.

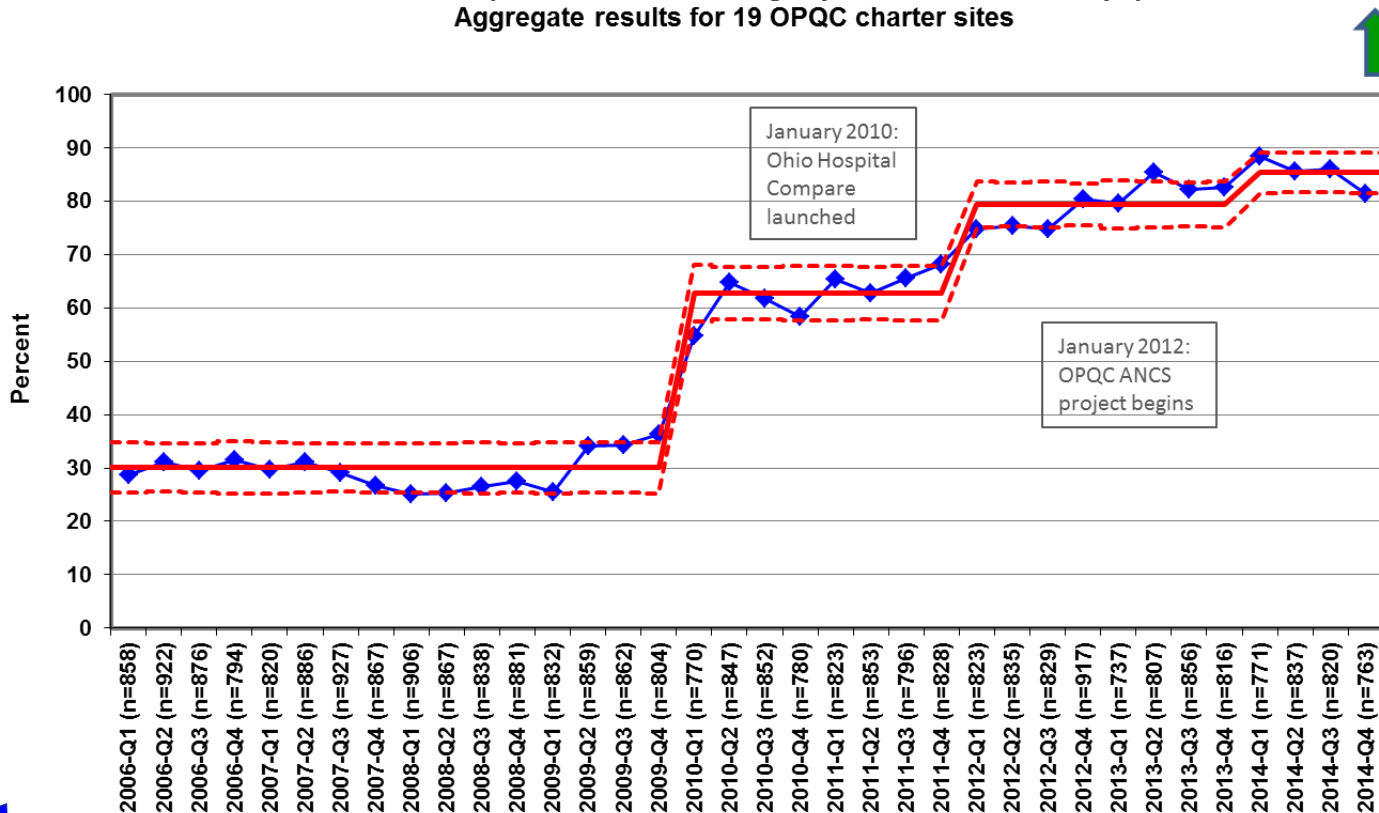
Percent of women between 24 0/7 wks and 34 0/7 wks who received any ANCS prior to delivery



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



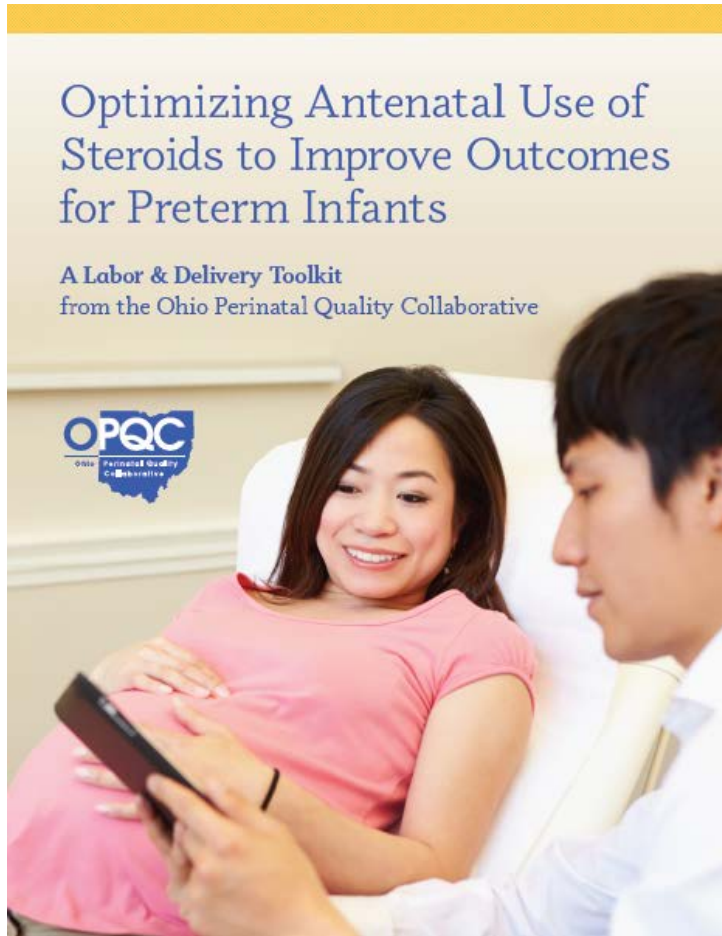
Source: Ohio Department of Health, Vital Statistics





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

TOOL #1: MODEL TO IMPROVE ANCS ADMINISTRATION

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)

TOOL #2: DATA COLLECTION FORM

- 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^{0/7th} weeks and 33^{6/7th} weeks gestational age at delivery
- Do **Not** complete a form if infant was < 24^{0/7th} weeks or > 33^{6/7th} weeks gestational age at delivery
- If the delivery is of multiples, please complete 1 form for each baby delivered

<p>1. Gestational age at delivery: _____ weeks _____ days</p> <p>2. Birth weight _____ lbs. _____ oz OR _____ grams</p> <p>3. Is this a multiple birth?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No (skip to Question 6) <p>4. If this is a multiple birth – please indicate the number of fetuses. _____ (whole number only)</p> <p>5. How was gestational age determined?</p> <ul style="list-style-type: none"> <input type="radio"/> Ultrasound <= 20 weeks <input type="radio"/> Ultrasound > 20 weeks <input type="radio"/> Other _____ <p>6. What date/time did the mother arrive at the delivering hospital?</p> <p>Date _____ (mm/dd/yyyy) Time _____ (HH:MM) (24 hr. clock)</p> <p>7. Were membranes ruptured prior to arrival at the delivering hospital?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <p>8. What date and time was the baby born?</p> <p>Date _____ (mm/dd/yyyy) Time _____ (HH:MM) (24 hr. clock)</p> <p>9. What was the reason for preterm birth?</p> <ul style="list-style-type: none"> <input type="radio"/> PTL <input type="radio"/> PFROM <input type="radio"/> Bleeding (any cause or diagnosis) <input type="radio"/> High blood pressure (any cause or diagnosis) <input type="radio"/> Other: _____ <p>Steroid (ANCS) Administration</p> <p>10. What type of ANCS medication was given?</p> <ul style="list-style-type: none"> <input type="radio"/> Betamethasone <input type="radio"/> Dexamethasone (skip to Question 12) <input type="radio"/> No ANCS medication given STOP <p>11. How many <u>doses</u> of Betamethasone were administered at any time by any provider prior to delivery? (1 dose = 1 injection of betamethasone)</p> <ul style="list-style-type: none"> <input type="radio"/> Zero <input type="radio"/> One <input type="radio"/> Two <input type="radio"/> Three or more <input type="radio"/> Can't determine 	<p>12. How many <u>doses</u> of Dexamethasone were administered at any time by any provider prior to delivery? (1 dose = 1 injection of dexamethasone)</p> <ul style="list-style-type: none"> <input type="radio"/> Zero <input type="radio"/> One <input type="radio"/> Two <input type="radio"/> Three <input type="radio"/> Four <input type="radio"/> Five or more <input type="radio"/> Can't determine <p>13. What date & time did the mother receive her <u>first</u> dose of steroids?</p> <p>Date _____ (mm/dd/yyyy) <input type="checkbox"/> Can't determine date Time _____ (HH:MM) (24 hr. clock) <input type="checkbox"/> Can't determine time</p> <p>14. <u>Where</u> was the 1st dose of steroids given?</p> <ul style="list-style-type: none"> <input type="radio"/> Referring Hospital <input type="radio"/> Delivery Hospital <input type="radio"/> Clinic or Doctor's office <input type="radio"/> Emergency Dept <input type="radio"/> Can't determine <p>15. <u>Where</u> were subsequent doses of steroids given? (Check <u>all</u> that apply)</p> <ul style="list-style-type: none"> <input type="radio"/> Referring Hospital <input type="radio"/> Delivery Hospital <input type="radio"/> Clinic or Doctor's office <input type="radio"/> Emergency Dept <input type="radio"/> Can't determine <p>16. What date & time did the mother receive her <u>last</u> dose of steroids?</p> <p>Date _____ (mm/dd/yyyy) <input type="checkbox"/> Can't determine date Time _____ (HH:MM) (24 hr. clock) <input type="checkbox"/> Can't determine time</p> <p>17. How many <u>courses</u> of ANCS did the mother receive in the pregnancy? *Full course = 2 injections of betamethasone or 4 injections of dexamethasone</p> <ul style="list-style-type: none"> <input type="radio"/> Did not receive steroids <input type="radio"/> Part of 1 Course <input type="radio"/> 1 Course <input type="radio"/> 2 Courses <input type="radio"/> More than 2 Courses <input type="radio"/> Can't determine
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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

FLOWCHART FOR BIRTH REGISTRY STAFF
Accurate Birth Registry Documentation of ANCS Administration





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

TOOL #4: MATERNAL TRANSFER FORMS

- 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

TOOL #4A

NURSING TRANSPORT SBAR	
Situation	Patient Name: _____ Referring hospital: _____ Referring physician: _____ Age: _____ Gravida: _____ Para: _____ Gestational Age: _____ Based on: <input type="checkbox"/> LMP <input type="checkbox"/> US
Background	Blood Type and Rh _____ Allergies _____ Pertinent Information About Current Pregnancy: <input type="checkbox"/> PTL <input type="checkbox"/> P.R.O.M. <input type="checkbox"/> Preeclampsia <input type="checkbox"/> Gestational Hypertension <input type="checkbox"/> Bleeding <input type="checkbox"/> Placenta <input type="checkbox"/> IUGR <input type="checkbox"/> Oligohydramnios <input type="checkbox"/> Gestational Diabetes <input type="checkbox"/> Hyperemesis <input type="checkbox"/> Multiples <input type="checkbox"/> Other _____ GBS Status: <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Pending <input type="checkbox"/> Unknown Other relevant history: _____ Pertinent Medical History: <input type="checkbox"/> Diabetes <input type="checkbox"/> Chronic HTN <input type="checkbox"/> Asthma <input type="checkbox"/> Thrombophilia <input type="checkbox"/> STD <input type="checkbox"/> HSV <input type="checkbox"/> Other: _____ Medications: _____
Assessment	Vital Signs: T _____ P _____ R _____ BP _____ Physical Exam Findings: <input type="checkbox"/> Pain: _____ <input type="checkbox"/> Bleeding: _____ Cervix: Dilation _____ Effacement _____ Station _____ <input type="checkbox"/> Deferred Presentation: <input type="checkbox"/> Vertex <input type="checkbox"/> Breech <input type="checkbox"/> Transverse Determined by: <input type="checkbox"/> VE <input type="checkbox"/> US Membranes: <input type="checkbox"/> Intact <input type="checkbox"/> Ruptured Date: _____ Time: _____ Fluid: <input type="checkbox"/> Clear <input type="checkbox"/> Light Meconium <input type="checkbox"/> Thick Meconium <input type="checkbox"/> Bloody <input type="checkbox"/> Foul Smelling Labor: <input type="checkbox"/> In Active Labor <input type="checkbox"/> Not in Active Labor Contractions: Frequency _____ Duration _____ Intensity: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Strong FHR: <input type="checkbox"/> Accels <input type="checkbox"/> Decels _____ <input type="checkbox"/> Variability _____ IV: _____ Rate: _____ Antenatal Steroids: Not Indicated: _____ Betamethasone (1st dose): Date _____ Time _____ Betamethasone (2nd dose): Date _____ Time _____ Magnesium: Not Indicated: _____ Bolus: Dose: _____ Time Completed _____ Maintenance: Dose _____ Time Started _____ Medications given/Time last dose: 1. _____ 2. _____ 3. _____ Labs drawn: _____ 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): _____

TOOL #4B

TRANSFER SUMMARY FORM FOR REFERRING HOSPITALS	
Situation	Patient Name: _____ Date and Time: _____ Referring Physician/Hospital: _____ Receiving hospital: _____ Reason for transport: _____ Age: _____ Gravida: _____ Para: _____ EDC: _____ Est. Gestation: _____ Based on: <input type="checkbox"/> LMP <input type="checkbox"/> US Expected Time of Arrival: _____ Copy of Prenatal to Receiving Hosp: <input type="checkbox"/> Yes <input type="checkbox"/> No
Background	Current Pregnancy: _____ Blood Type and Rh: _____ <input type="checkbox"/> PTL <input type="checkbox"/> P.R.O.M. <input type="checkbox"/> Preeclampsia <input type="checkbox"/> Gestational Hypertension <input type="checkbox"/> Bleeding <input type="checkbox"/> Placenta <input type="checkbox"/> IUGR <input type="checkbox"/> Oligohydramnios <input type="checkbox"/> Gestational Diabetes <input type="checkbox"/> Hyperemesis <input type="checkbox"/> Multiples <input type="checkbox"/> Other _____ GBS Status: <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Pending <input type="checkbox"/> Unknown Tox Screens: _____ Hepatitis B Status: <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Pending HSV Status: <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Unknown Rubella: <input type="checkbox"/> Immune <input type="checkbox"/> Non Immune RPR: <input type="checkbox"/> Positive <input type="checkbox"/> Negative Bacterial/Viral Cultures: Copy of Results sent <input type="checkbox"/> Yes <input type="checkbox"/> No Cultures Pending: <input type="checkbox"/> Yes <input type="checkbox"/> No Past OB History: <input type="checkbox"/> PTU/PTB <input type="checkbox"/> Preeclampsia <input type="checkbox"/> Gestational Hypertension <input type="checkbox"/> P.R.O.M. <input type="checkbox"/> IUGR <input type="checkbox"/> Prior C-Section Other: _____ Medical History: <input type="checkbox"/> Diabetes <input type="checkbox"/> Chronic HTN <input type="checkbox"/> Asthma <input type="checkbox"/> Thrombophilia <input type="checkbox"/> STD <input type="checkbox"/> HSV <input type="checkbox"/> Other: _____ Allergies: _____ Surgeries: _____ Medications: _____
Assessment	Vital Signs: T _____ P _____ R _____ BP _____ FHR Baseline _____ Physical Exam Findings (Check all that apply): <input type="checkbox"/> Pain: _____ <input type="checkbox"/> Bleeding: _____ Cervix: Dilation _____ Effacement _____ Station _____ <input type="checkbox"/> Deferred Presentation: <input type="checkbox"/> Vertex <input type="checkbox"/> Breech <input type="checkbox"/> Transverse Determined by: <input type="checkbox"/> VE <input type="checkbox"/> US Membranes: <input type="checkbox"/> Intact <input type="checkbox"/> Ruptured Date: _____ Time: _____ Fluid: <input type="checkbox"/> Clear <input type="checkbox"/> Light Meconium <input type="checkbox"/> Thick Meconium <input type="checkbox"/> Bloody <input type="checkbox"/> Foul Smelling Labor: Time of Onset: _____ <input type="checkbox"/> Not in Active Labor Contractions: Frequency _____ Duration _____ Intensity: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Strong FHR: <input type="checkbox"/> Accels <input type="checkbox"/> Decels _____ <input type="checkbox"/> Variability _____ IV: _____ Medications given/Time last dose: _____ Antenatal Steroids: Not Indicated: _____ Betamethasone (1st dose): Date _____ Time _____ Betamethasone (2nd dose): Date _____ Time _____ Magnesium: Not Indicated: _____ Bolus: Dose: _____ Time Completed _____ Maintenance: Dose _____ Time Started _____ Labs/Diagnostic Tests: _____ Copies sent: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending
Recommendation	Plan of Care/Additional Information: _____ Transferring Nurse (print): _____ SBAR Report Given to Receiving Nurse (print): _____

Accepting Hospitals

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: <input type="checkbox"/> PTL <input type="checkbox"/> P.R.O.M. <input type="checkbox"/> Preeclampsia <input type="checkbox"/> Gestational Hypertension <input type="checkbox"/> Bleeding <input type="checkbox"/> Previa <input type="checkbox"/> IUGR <input type="checkbox"/> Oligohydramnios <input type="checkbox"/> Gestational Diabetes <input type="checkbox"/> Hyperemesis <input type="checkbox"/> Multiples <input type="checkbox"/> Other _____ GBS Status: <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Pending <input type="checkbox"/> Unknown Blood Type and Rh _____ Allergies _____ Other Relevant History: _____
Assessment	Vital Signs: T _____ P _____ R _____ BP _____ Physical Exam Findings: <input type="checkbox"/> Bleeding: _____ Cervix: Dilation _____ Effacement _____ Station _____ <input type="checkbox"/> Deferred Presentation: <input type="checkbox"/> VTX <input type="checkbox"/> Breech <input type="checkbox"/> Transverse Determined by: <input type="checkbox"/> VE <input type="checkbox"/> US Membranes: <input type="checkbox"/> Intact <input type="checkbox"/> Ruptured Labor: <input type="checkbox"/> In Active Labor <input type="checkbox"/> Not in Active Labor Contractions: Frequency _____ Duration _____ Intensity: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Strong FHR: <input type="checkbox"/> Accels <input type="checkbox"/> Decels _____ <input type="checkbox"/> Variability _____ Medications given: 1. _____ 2. _____ 3. _____ Labs drawn: _____ Diagnostic Tests completed _____
Recommendation	Transport Plan: <input type="checkbox"/> Air Transport <input type="checkbox"/> Ground Transport Interventions Prior to Transport: Airway: <input type="checkbox"/> Stable <input type="checkbox"/> Intubate Breathing: <input type="checkbox"/> Stable/Room Air <input type="checkbox"/> Nasal Cannula <input type="checkbox"/> Intubation/Ventilation Circulation: <input type="checkbox"/> Stable <input type="checkbox"/> LR/NS bolus <input type="checkbox"/> PRBC <input type="checkbox"/> Pressors Antenatal Steroids: <input type="checkbox"/> Already Given <input type="checkbox"/> To Be Given Prior to Transfer <input type="checkbox"/> Not Indicated _____ Magnesium: <input type="checkbox"/> Already Started <input type="checkbox"/> To Be Started Prior to Transfer <input type="checkbox"/> Not Indicated _____ IV Access: <input type="checkbox"/> Established <input type="checkbox"/> Not Established, Recommend: _____ Admit to: <input type="checkbox"/> ICU <input type="checkbox"/> Labor & Delivery <input type="checkbox"/> Antepartum <input type="checkbox"/> 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

Level of Reliability (Process Performance)

Activities to Achieve Desired Reliability

- Level 1 (10^{-1})
 - 80-90%
 - 1-2 failures out of 10

- Team focus on outcome goal
- Feedback of information
- Awareness and training
- Standardize decision-making (e.g. guidelines)

Intent, Vigilance and Hard Work

- Level 2 (10^{-2})
 - 95-99%
 - <5 failures out of 100

- Checklists
- Redundancy
- Real time identification of failures
- Make the right thing easy to do
- Standardize process

Use of Reliability Science & Human Factors

- Level 3 (10^{-3})
 - 99.5-99.9%
 - <5 failures out of 1000

- Mindfulness, Take advantage of habits
- Pre-occupation with failure
- Resilience
- Deference to expertise (Avoid “Top Down” Culture)
- System is visible
- Standardize behavior

High Reliability Organizations

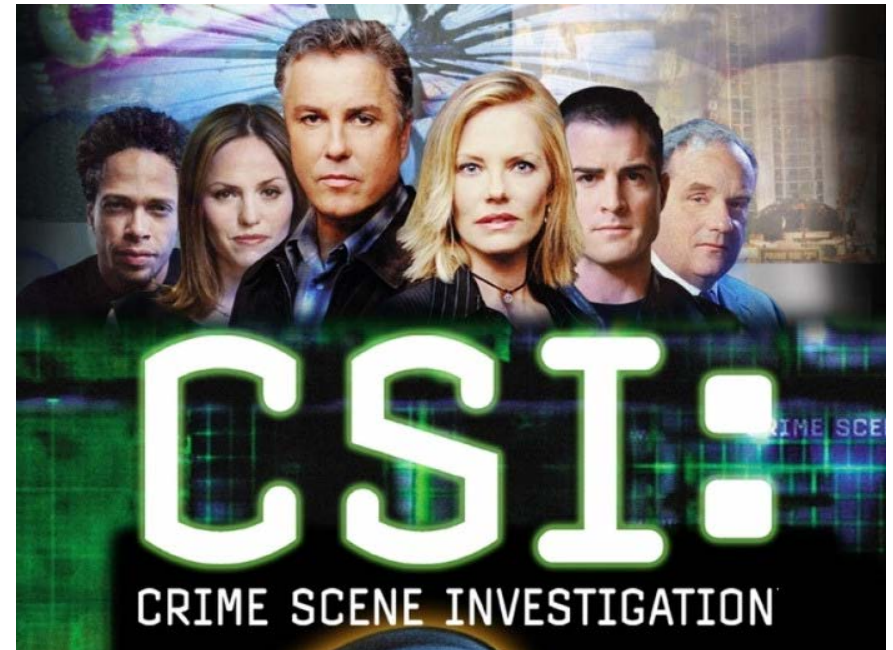
Building a “High Reliability” Culture

- These hospitals are always on the look out 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.”



TOOL #5: CORTICOSTEROID INVESTIGATION (CSI) FORM

- 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”

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

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?

