Banner Health®

Care Management Clinical Practice

Chorioamnionitis Management in the Well Newborn

Chorioamnionitis Management in the Well Newborn
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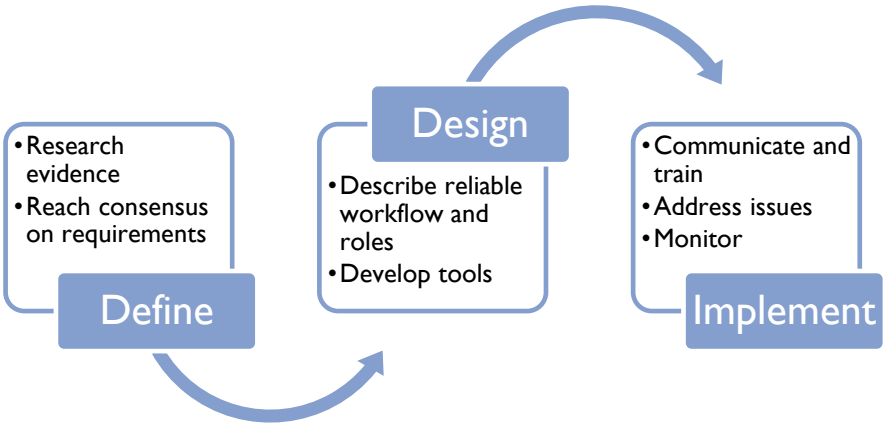

The toolkit is kept on a team specific SharePoint site. This provides:
- *A single source for the most recent material*
- *Interaction for sharing of additional tools and resources*

Chorioamnionitis Management in the Well Newborn
Executive Summary

A diagnosis of maternal chorioamnionitis by the delivering obstetricians has neonatal implications and proper timely management of the baby is vital. The 2010 CDC guidelines regarding GBS Disease, as well as the 2012 Clinical Report from the AAP addressed the neonatal management with maternal chorioamnionitis diagnosis; and recommends drawing CBC and blood cultures and initiation of antibiotics for all such newborns. In addition, the clinical practice developed presents an opportunity to build practice-based evidence and refine the approach.

Currently, there is significant variation throughout Banner as to when the lab work is done and IV antibiotics started; also most units do not distinguish in the management approach of a well appearing newborn compared to one who appears to be ill. Standardizing the approach supports timely management of these newborns as well as giving the family time for skin-to-skin bonding and early initiation of breast feeding if desired.

New practice to be implemented

Once the diagnosis of maternal chorioamnionitis is made by the delivering physician and the newborn's gestational age is 34 weeks or greater and is well appearing on initial evaluation, this will activate the process flow where by the family can spend the 1st hour with the newborn for bonding, breast feeding and skin to skin care. The lab work will be performed, including the blood culture and CBC. Then by 3 hours of life, the IV will be placed and antibiotics administered. This will be done with the help of conditional/standing orders.
The implementation of this new clinical practice will "automate" these actions in the couplet care environment to ensure timely initial care of the newborn. The physician will be notified of abnormal lab values and changes in the newborn's clinical condition beyond the initial management phase, subsequent management continues to be directed by the physician.

Practice-based evidence

With the assistance of Clinical Performance Analytics, data will be collected to answer some of the following practice-based evidence questions:

- Are we missing any newborns on the initial evaluation who end up in the SCN/NICU within 12-24 hours after birth?
- Are we drawing labs and administering antibiotics in a timely manner?
- Are there any adverse outcomes attributed to the above care management practice?
- Is the early bonding time, early breastfeeding initiation and skin to skin care improving the patient satisfaction?

This data will allow revision of the clinical practice, contribute to the body of knowledge, and support Banner's vision to be an industry leader.

Chorioamnionitis Management in the Well Newborn
Clinical Practice Approval Form

Clinical Practice Title: Chorioamnionitis Management in the Well Newborn	
Type of Review: ☒ New Clinical Practice ☐ Revisions of Existing Clinical Practice Original Approval date:	Care Management Council submission date: August 2012
Clinical Practice Owner / Author: (e.g., CCG and WG Lead(s) named)	**Contact Information**
K Kirmani, MD, FAAP	Name: K Chittenden
K Chittenden, MS, RNC-OB, CNS-BC	Phone:
	email:

Type of Clinical Practice:	☒ **Expected**	☐ **Recommended**	☐ **Optional**
Brief Description of Clinical Practice			
All well newborns greater than 34 weeks gestational age born to obstetrical patients with diagnosed or suspected chorioamnionitis will have a neonatal chorioamnionitis management plan initiated within the first hour after birth. All ill-appearing infants, regardless of gestational age will receive a full sepsis evaluation and treatment.			
Labor and Delivery Couplet Care NICU	Newborn Nursery Pharmacy Laboratory	Dept of Pediatrics Dept of OB/GYN	

Reviewed History	
Reviewed by (name/group):	**Date:**
Chorioamnionitis WG	30 July 2012
Pediatric WG	02 August 2012
OB CCG	08 August 2012
CMO	22 August 2012
CNO	22 August 2012
Clinical Practice Toolkit Link:	

Upon Care Management Council Approval Clinical Practices enter DESIGN Phase in Care Management.

Care Management Council Approval	
☐ Returned to Author for Revision	Date:
☐ Approved by Care Management Council	Date: 23 August 2012

Chorioamnionitis Management in the Well Newborn
Clinical Practice

TITLE: Chorioamnionitis Management in the Well Newborn		
Number:	**Date Posted:** February, 2013	
Type: Clinical Practice	**Contact:**	
Approved Date: August, 2012	**Implementation Date:** February, 2013	**Deactivation Date:** as needed
Facilities: All Banner facilities providing obstetrical and newborn care		
Approved by: Care Management Council		

PRACTICE APPROACH:
Expected Clinical Practice

PRACTICE STATEMENT:
All well newborns greater than 34 weeks gestational age born to obstetrical patients with diagnosed or suspected chorioamnionitis will have a neonatal chorioamnionitis management plan initiated within the first hour after birth. All ill-appearing infants, regardless of gestational age will receive a full sepsis evaluation and treatment.

Rationale:
Chorioamnionitis is an obstetrical condition which has implications for the well-being of both mother and her newborn infant. It is standard of care to draw labs and start antibiotics in infants born to mothers with a diagnosis of chorioamnionitis. According to the 2010 CDC guidelines regarding Group B Strep (GBS) Disease, as well as 2012 Clinical Report from the AAP, the diagnosis of maternal chorioamnionitis requires interventions for the newborn, which include drawing of CBC and blood cultures, and initiation of antibiotics.
In an asymptomatic term newborn, there is no evidence that the drawing of a CBC and blood cultures and initiation of antibiotics need to be given within the 1st hour of life. However, based on available evidence and expert consensus, the recommendation is that for the Well Appearing Term Infant with Maternal Chorioamnionitis, blood cultures should be drawn within 1 hour of birth (CBC is more sensitive at 6 hours of life but can be drawn with the blood culture) and the 1st dose of ABX should be given within 3 hours of birth.

CLINICAL APPROACH:
Chorioamnionitis is diagnosed by the attending obstetrician using the evidence-based definition as follows:

- Positive amniotic fluid culture and/or gram stain and/or,
- Maternal fever of 100.4˚F (38 ˚C) or higher, which may be accompanied with clinical features such as:
    - Category 2 or 3 fetal heart rate tracing (as per NICHD Fetal Heart Rate Tracing Guidelines,2008)
    - Premature contractions
    - Uterine tenderness

    - Abdominal tenderness OR
    - Hypertonic uterus
- Maternal and/or fetal tachycardia
- Foul smelling amniotic fluid
- Purulent cervical discharge OR
- Abnormal findings on amniocentesis (i.e. 30 or more leukocytes per HPF or glucose level of less than 15 mg/dl).

Once the diagnosis of chorioamnionitis or suspected chorioamnionitis is established the newborn infant will receive an evaluation and antibiotics administration.

The well term newborn evaluation will include: blood culture soon after birth and CBC (the sensitivity of the CBC as a screen for sepsis improves if the sample is obtained or repeated at 6 to 12 hours of life, rather than at birth).

All ill-appearing babies should receive the full sepsis evaluation and initiation of antibiotics soon after birth.

In well appearing term infants the timing of blood draw and initiation of antibiotics will be balanced with the importance of early bonding with mother by using skin to skin approach, as well as early initiation of breastfeeding if desired. Evidence supports that the risk of neonatal sepsis in this group of well appearing asymptomatic term babies is very low, and it is very reasonable to accomplish both goals of early bonding and initiating breastfeeding within the first few hours after birth.

The approach to initiating antibiotics for well appearing infants will be as follows:

A. Blood culture to be drawn soon after birth, ideally within the first hour of life. CBC can be drawn at the same time, or up to 6-12 hours of age.
B. The well appearing infants may be allowed to spend time with the mother and family for the 1st few hours for bonding and breastfeeding.
C. Begin the first dose of antibiotics within three hours of birth.
D. The recommended choice of antibiotics are Ampicillin and Gentamicin. Once the pathogen is identified, antibiotic therapy should be narrowed.
E. The antibiotics should be discontinued at 48 hours if the probability of sepsis is low.

REFERENCES:

A review of NICHD standardized nomenclature for cardiotocography: the importance of speaking a common language when describing electronic fetal monitoring; Roginson, G, MD; Reviews in Obstetrics and Gynecology; 1(2), 2008.

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Clinical features and diagnoses of sepsis in term and late preterm infants; Edwards, M, MD; www.UpToDate.com, January 2012.

Effect of early skin-to-skin contact after delivery on duration of breastfeeding: A prospective cohort study; Mikiel-Kostyra K, Mazur J, Boltruszko I.; Acta Paediatr 2002;91:1301–1306.

Epidural fever and its implications for mothers and neonates: taking the heat; Shatken S, CNM, Journal of Midwifery and Women's Health; 57(1); February 2012.

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Intrapartum fever at term, diagnostic markers to individualize the risk of fetal infection: a review; Evers A, MD; Obstetrical and Gynecological Survey,67:3, 187-200; 2012.

Management of neonates with suspect or proven early-onset bacterial sepsis; Polin, R. and The Committee on Fetus and Newborn; Pediatrics, 129 (5), 1006-1016; May 2012.

Prevention of Perinatal Group B Streptococcal Disease Revised guidelines from CDC, 2010; Department of Health and Human Services; Vol 59; No. RR-10; November 19, 2010.

Protocol Committee Academy of Breastfeeding Medicine, Howard, CR, McCoy, RC: Clinical Protocol #5 Peripartum Breastfeeding Management for the Healthy Mother and Infant at Term. www.bfmed.org Academy of Breastfeeding Medicine, 2008.

Riordan, JM, Auerbach, KG. Breastfeeding and Human Lactation. Boston. Jones and Bartlett, 2010.

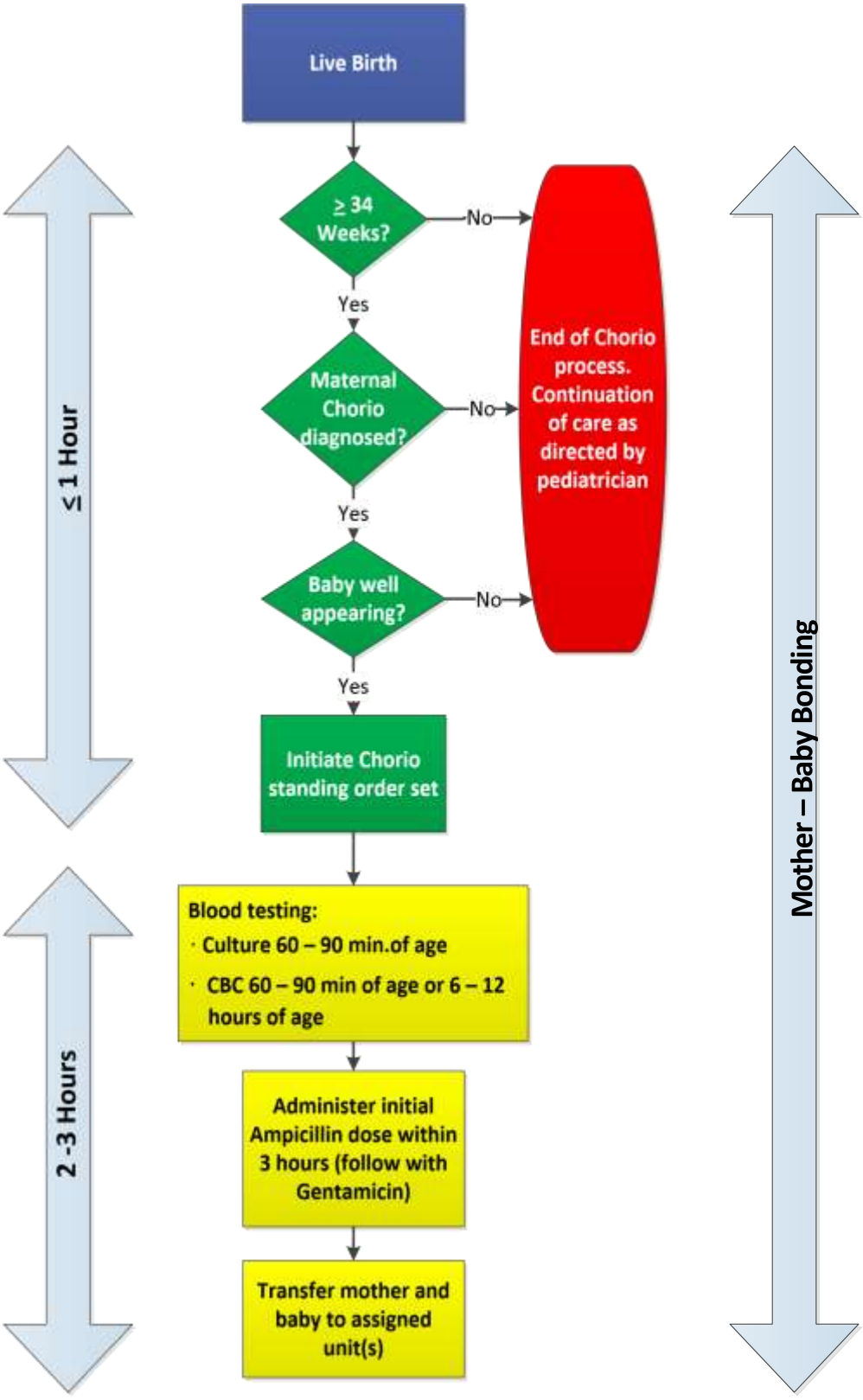
Treatment and outcomes of sepsis in term and late preterm infants; Edwards, M, MD; www.UpToDate.com, January 2012.

Chorioamnionitis Management in the Well Newborn
Design Summary

Clinical Practice: Chorioamnionitis Management in the Well Newborn	
CCG: Pediatric CCG	**CCG Co-Leads:** Dr. Kirmani and K Chittenden
Program Manager/Director: M Brooks	
Date: February, 2013	
Clinical Practice Statement: All well newborns greater than 34 weeks gestational age born to obstetrical patients with diagnosed or suspected chorioamnionitis will have a neonatal chorioamnionitis management plan initiated within the first hour after birth. All ill-appearing infants, regardless of gestational age will receive a full sepsis evaluation and treatment.	
Executive Summary: A diagnosis of maternal chorioamnionitis by the delivering obstetricians has neonatal implications and proper timely management of the baby is vital. The 2010 CDC guidelines regarding GBS Disease, as well as the 2012 Clinical Report from the AAP addressed the neonatal management with maternal chorioamnionitis diagnosis; and recommends drawing CBC and blood cultures and initiation of antibiotics for all such newborns. In addition, the clinical practice developed presents an opportunity to build practice-based evidence and refine the approach.	

Engineered Design Impacts Overview
People: • All well appearing newborns • WIS Staff (both nursing and physicians) • Pediatricians • NICU Staff (both nursing and physicians)
Methods and Procedures: • Newborn Standing Order Set updated and provides process for newborns with chorio • Specific medications provided in the order set • Meets the CDC requirements
Technology and Equipment: • Newborn Standing Order Set • Cerner forms/flowsheets
Measuring Success: • % of infants receiving blood work within first hour after birth • % of infants that received antibiotics within the first 3 hours after birth • Number of OB diagnosis of Chorio that did not utilize protocol (compliance) – were not treated using blood work or antibiotics (missed cases)

Chorioamnionitis Management in the Well Newborn
Process Flow



Chorioamnionitis Management in the Well Newborn
Education Plan

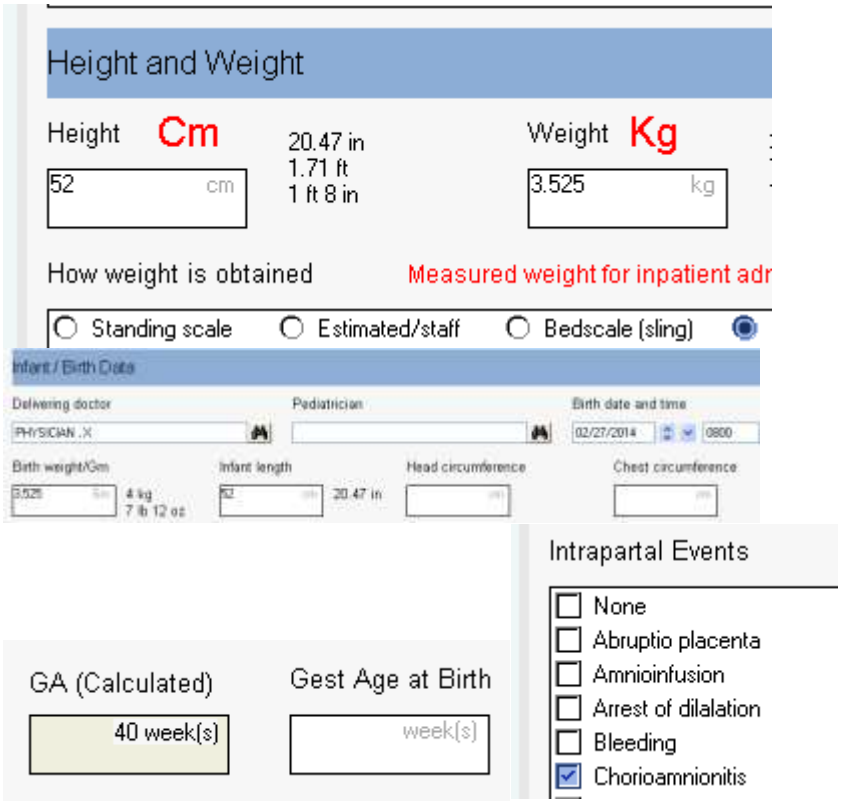
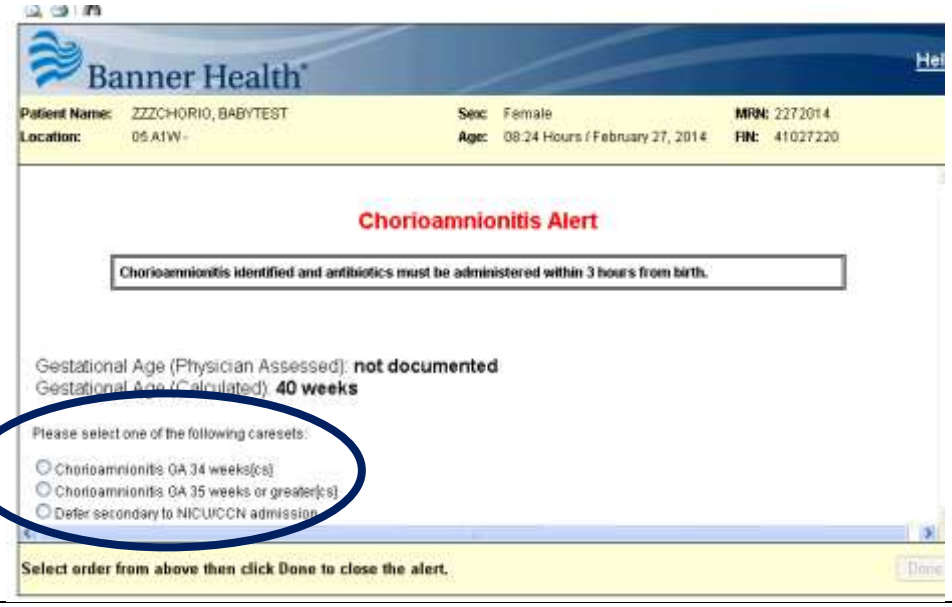
Audience	Goal	Tools
Nursing: ** **Well – baby, L/D and NICU/SCN Nurses**	▪ Overview ▪ Roles & Responsibilities ▪ Identification ▪ Initiation of treatment protocol ▪ Documentation	▪ Executive Summary ▪ Training Module ▪ Orders Sets w/Tip Sheet ▪ Chorioamnionitis Clinical Practice ▪ Process flow diagram
Nursing & Clinical Managers: (Directors, Educators, & CNS')	▪ Overview ▪ Roles & Responsibilities	▪ Executive Summary ▪ Chorioamnionitis Clinical Practice ▪ Implementation Kickoff ppt
Physicians: ** **(provider for newborns)** ▪ **Pediatricians** ▪ **Family Practice** ▪ **Obstetricians** ▪ **Neonatologists/NNP's** ▪ **OB and Peds Residents**	▪ Overview ▪ Roles & Responsibilities	▪ Executive Summary ▪ Chorioamnionitis Clinical Practice
Pediatric Pharmacist	▪ Overview ▪ Roles & Responsibilities ▪ Assist in the Order Set design (standing vs conditional) and documentation	▪ Executive Summary ▪ Process flow diagram ▪ Chorioamnionitis Clinical Practice ▪ Cerner Resources

Training Module

Chorioamnionitis Management in the Well Newborn
Communication Plan

Audience	Vehicle	Timing	Owner	Tools
Physicians – OB/WIS/Peds	Meetings Bulletin Boards Emails, Newsletters	Prior to Implementation Based on Facility Specific Timeframes	CMO Medical Staff Lead	Executive Summary Clinical Practice*
Nursing – OB/WIS/Peds	Meetings Bulletin Boards Emails, Newsletters	Prior to Implementation Based on Facility Specific Timeframes	CNO Facility Lead	Executive Summary Clinical Practice* Process Flow* Tip Sheet*
Administrative Team	Administrative Team Meetings or Emails	Updates as Information is Presented in Medical Staff and as Implementation Begins and Proceeds	CMO CNO Facility Lead	Executive Summary Clinical Practice* Communication Plan*
Groups *indirectly impacted* by the change, but likely interested in having an awareness of what's happening	General Communication of the process through facility newsletters and facility wide fliers	Prior, During and Post Implementation	Facility Lead	Newsletters Article* General Facility Flier

Chorioamnionitis Management in the Well Newborn
Clinical Automation Tip Sheet

Instructions	Screen Shots
Complete admission height and weight form and neonatal birth record with: • Date and time of birth • Gestational age • Choriomanionitis checked • Weight	
Upon closing chart discern advisor will appear. Choose the correct careset based on gestational age, or if the infant is being directly admitted to the NICU or CCN, choose the defer option.	

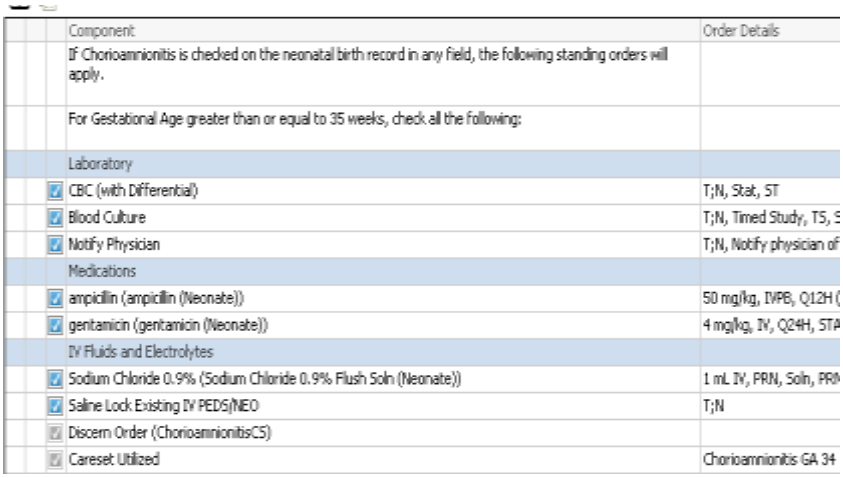
The careset will come up completely prechecked. Once you choose ok, the dose calculator appears.

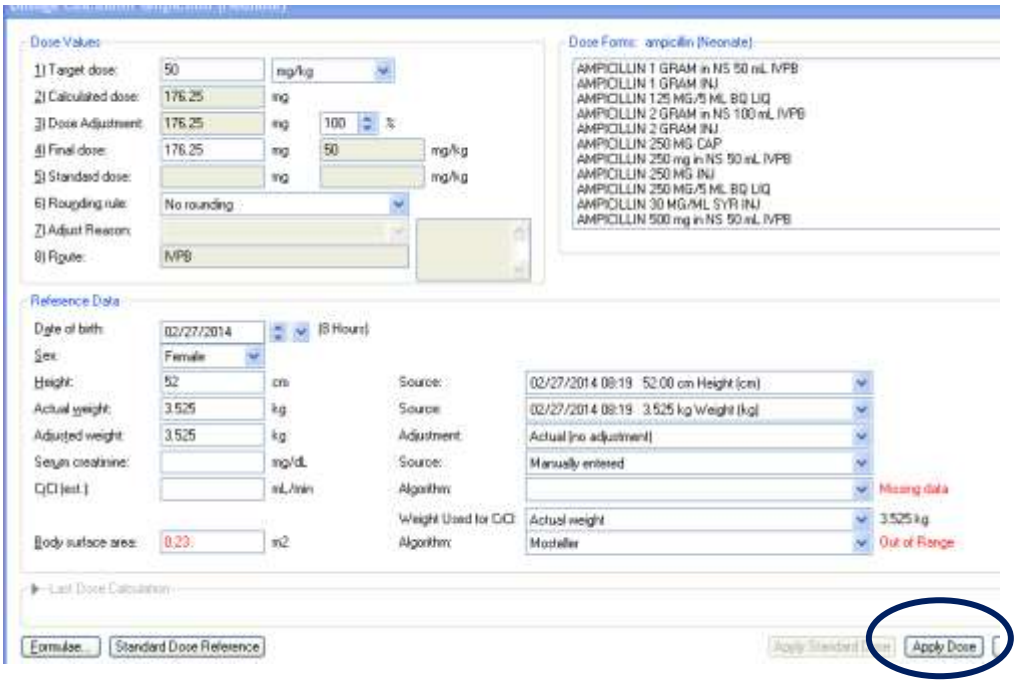
Baby's weight must be in admission height and weight form and the dose will be calculated.

Click "apply dose" for both ampicillin and gentamicin.

All medications must be checked by pharmacy prior to administration.

Sign the orders.





Chorioamnionitis Management in the Well Newborn
Facility Implementation Lead Responsibilities