Colorado Perinatal Care Quality Collaborative
Colorado Antibiotic Stewardship Collaborative - Neonatal Early Onset Sepsis (CASC-NEOS)

Project Charter with Sample Answers

Hospital Name: _____

Brief Project Overview:

Antibiotic resistance is a growing threat to human health and wellbeing. Additionally, antibiotic exposure in the newborn period has been increasingly linked to adverse childhood outcomes including asthma, allergies, and obesity. Targeting antibiotics to the right neonate, at the right time, for the right duration of time, is an increasingly important patient care goal. Published reports suggest that there is an unexplainably wide variation in antibiotic prescriptions for hospitalized newborns between centers. In 2018, the American Academy of Pediatrics (AAP) published a Clinical Report which proposed evidence-based strategies for determining appropriate antibiotic use for Early Onset Sepsis in newborns delivered at 35 0/7 weeks and beyond. This project aims to implement the recommendations outlined in that Clinical Report with a specific focus on risk stratification of newborns using the Sepsis Risk Calculator.

Aim Statement: (SMART – Specific, Measurable, Achievable, Realistic, Time-Bound)

By *(date)*, *(insert hospital name here)* will utilize defined best practices for evaluating risk for neonatal sepsis to demonstrate a 10% decrease in antibiotic usage rate (AUR), without any missed cases or delayed treatment for cases of true sepsis in patients 35 0/7 weeks or beyond who are delivered at our hospital.

1. **What are we trying to accomplish?**

Problem:

- Describe your current process for evaluating and treating newborns for early onset sepsis

Example: There is no standard approach to evaluation and treatment of early onset sepsis in our late preterm and term newborns. Some providers evaluate and treat all babies whose mothers were diagnosed with chorioamnionitis. Other providers only evaluate and treat babies with symptoms. We check a lot of labs (CBC, CRP) and use the labs to help guide initiation and duration of treatment. There is not a standard antibiotic duration, although most babies receive treatment for 48 hours minimum. When a baby is started on antibiotics, the baby is moved to our nursery for the

duration of treatment, or is transferred to a higher level nursery depending on symptoms.

Project Description:

- Describe your thoughts about what could be improved about the current process?

  Example: The lack of standardization in evaluation and treatment for EOS may lead to overprescribing of antibiotics for low risk newborns and/or under prescribing of antibiotics for high risk newborns. This places patients at risk of unnecessary antibiotic exposure and untreated sepsis, causes confusion for nursing staff, is a source of dissatisfaction for parents, and places medical providers at legal risk. It would be helpful to have a standardized process for deciding which babies need evaluation and treatment, and also a standardized duration of therapy. Also, the current process separates asymptomatic babies from their mother, which is disruptive to breastfeeding and to early bonding.

- What interventions might you implement? (i.e. Sepsis Risk Calculator, Automatic Stop Orders). Note the patient population and the unit where the work will take place.

  Example: Our team plans to implement the Sepsis Risk Calculator to standardize our evaluation of newborns for early onset sepsis. We would use the SRC for every baby 35 0/7 weeks or beyond delivered at our hospital and admitted to newborn nursery/special care nursery/NICU. Once the SRC is implemented, we hope to implement other interventions that will standardize the duration of therapy and may help to reduce the number of lab tests that are sent for each patient.

Rationale:

- Why/how do you think the intervention(s) proposed will benefit your hospital, nursery, patients, families, team etc.?

  Example: Newborns will be exposed to antibiotics based on their statistical risk of infection. Fewer babies will be exposed to antibiotics unnecessarily. Nursing staff will have a clear understanding of which babies are likely to be prescribed antibiotics and will be able to communicate this to the parents/families. Fewer mothers and babies will undergo the distress of blood draws for cultures and IVs for antibiotics, improving the bonding experience. Medical providers will save time because they will have a clear understanding of the statistical risk of infection for each newborn.

- What is the business impact of the proposed intervention(s)? Such as reduced costs or financial benefits to your hospital?

  Example: Knowing the risk of sepsis will facilitate timely discharge (and lower hospital costs) – or prolonged stay in the case that it's appropriate. Childhood health in our community may improve if fewer infants are exposed to antibiotics in the newborn period.

- Provide any available baseline data demonstrating your nursery's current Antibiotic Utilization Rate (AUR)

  Example: With help from CPCQC, create a run chart of neonatal AUR for the 6 month period prior to CASC-NEOS commitment in order to determine baseline AUR

  Aim Statement: (SMART – Specific, Measurable, Achievable, Realistic, Time-Bound)

  > By ____[Date]_____, _____[Hospital Name]_____ will utilize defined best practices for evaluating risk for neonatal sepsis to demonstrate a __X%__ decrease in antibiotic utilization rate (AUR), without any missed cases or delayed treatment for cases of true sepsis in patient 35 0/7 weeks or beyond.

  Example 1: (for nurseries prescribing antibiotics based on "old" CDC/AAP guidelines, or who otherwise may have high rates of antibiotics, etc): By utilizing the EOS Sepsis Risk Calculator and implementing standard treatment guidelines, we will decrease our Antibiotic Utilization Rate (AUR) in the first week of life in newborns ≥35 weeks gestation from X/1000 patient days, to Y/1000 patient days (a Z% decrease) by XX/XX/20XX and sustain this decrease for 6 months.

  Example 2: (for nurseries not currently using any guidelines, may be missing infants at high risk of sepsis, etc): By implementing the EOS Sepsis Risk Calculator and standard treatment guidelines, we will increase the use a standard assessment of sepsis risk in the first 24 hours in newborns ≥ 35 weeks gestation from X/100 patients to 100% of patients by XX/XX/20XX and sustain this increase for 6 month. By XX/XX/20XX we will be recording our AUR monthly.

2. **What changes can we make that will result in improvement?**

Key Stakeholders:

- Whose input and support will this initiative require?

  Example: Senior Leaders (CNO, CMO, CEO), Providers (MD, NP/PA), Pharmacist(s), L&D Nursing Staff, Nursery Nursing Staff, Nurse Managers, EMR IT Staff, Lab/Microbiology Technician(s), Families

- How will you engage these stakeholders?

  Example: Explain to senior leadership that implementation of this initiative can increase patient satisfaction, lead to better short- and long-term outcomes for moms and babies, and can lead to decreases in costly hospital stays. Provide education to nursing staff on the benefits of decreasing unnecessary neonatal antibiotic use for moms and babies.

Barriers:

- What barriers do you predict?

  Example: The belief that a lower threshold for antibiotics is good "just to be safe." The belief that if a blood culture is negative, a newborn is still likely to have an infection. Finding the time to use the tool, to find data if not readily available in the EHR, and to educate staff on the intervention(s).

- How will you overcome these barriers?

  Example: We will train staff and providers on the problems with antibiotic use "just to be safe" as well as discussion about the rarity of missed cases of early onset sepsis. We will seek assistance in determining the most efficient way to incorporate intervention(s) into our workflow to not experience a substantial time burden.

3. **How will we know that a change is an improvement?**

Outcome Measure(s):

- List the measure(s) you ultimately want to affect as a result of this initiative and decide how you will collect the data.
- Antibiotic Utilization Rate (AUR) = Antibiotic Days / 1000 patient care days
  Note: Refer to the tools provided in the Neonatal Antibiotic Stewardship Toolkit for help on this measure:
  - The AUR Calculation Guide includes detailed guidance on how to calculate this measure
  - The AUR Annotated Run Chart Template will help you track and visualize improvements in AUR
- Proportion of newborns exposed to antibiotics = # newborns ≥35 weeks who receive antibiotics in a given month / total # newborns ≥35 weeks admitted to your center in that given month

List any additional outcome measures your team is interested in collecting

Example:
- Number of blood cultures, lab tests, etc.
- Family/parent satisfaction / breastfeeding rates / provider satisfaction etc.

Process Measure(s):
- List the measure(s) that will tell you if the system is performing as planned to affect the outcome measure
- Measure whether intervention(s) are being performed on all intended newborns

Examples:
- % of patients with EOS SRC score recorded by 2 hours of life (or other appropriate time frame)
- % of time communication of score and recommendation to provider occur, when indicated
- % of time recommendation is adopted by provider and/or % of time stop date ordered at onset of antibiotics

Balancing Measure(s):
- List the measure(s) that will tell you whether you are introducing problems into the system.

- Conduct a case review on all babies with a positive blood culture drawn in the first 7 days of life to evaluate whether quality improvement changes made resulted in delayed or missed cases of sepsis

List any additional balancing measure your team is interested in collecting

4. Project Leadership Information (fill in as appropriate)

Physician Champion:

Name	Phone #	Email

Pharmacy Champion:

Name	Phone #	Email

Director of Women and Infant Services:

Name	Phone #	Email

Manager of Labor and Delivery:

Name	Phone #	Email

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Nursing Champion (if other than director or manager):

Name	Phone #	Email

Chief of Obstetrics or Designee:

Name	Phone #	Email

Data Collector:

Name	Phone #	Email

Data Collector:

Name	Phone #	Email

Other Key Project Team Member (such as IT support):

Name	Phone #	Email

Other Key Project Team Member:

Name	Phone #	Email

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Senior Executive Endorsement

Our hospital is committed to active participation in the CASC-NEOS antibiotic stewardship initiative. As senior executive of the hospital, I agree to support the project, assist in removing any barriers to successful achievement of the project goals and allocate adequate resources to conduct the work of the project at our hospital.

CEO Signature _____ Date _____

CNO Signature _____ Date _____