

Is the current practice of treating every baby whose mother has been diagnosed with chorioamnionitis with a rule out sepsis evaluation and antibiotics a valid practice?

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Is the current practice of treating every baby whose mother has been diagnosed with chorioamnionitis with a rule out sepsis evaluation and antibiotics a valid practice?

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Background

- Chorioamnionitis is defined as an infection and inflammation of the fetal membranes¹.
- The current guidelines recommend to obtain a blood culture and to treat the neonate empirically with gentamycin and ampicillin for 48 hours⁴
- These antibiotics are not without side effects:
 - Hearing⁵ and renal⁶ disturbances
- Antibiotics require NICU stay
 - Decreases parental bonding¹¹, breastfeeding¹² and is expensive¹⁸
- Kaiser Sepsis calculator was created to reduce empiric antibiotic usage, It is validated in other patient populations^{14,15}, will it be valid in ours?

Problem Statement

Is the current practice of treating every baby whose mother has been diagnosed with chorioamnionitis with a rule out sepsis evaluation and antibiotics a valid practice? Can implementation of a sepsis calculator safely decrease the number of babies empirically treated with antibiotics?

Methods

This is an internally designated quality improvement study. The NICU log book was reviewed and every neonate from February 7, 2017 until February 26, 2018, who was ≥36 weeks and whose mom was diagnosed with chorioamnionitis, was included.

Data was collected And plugged into Kaiser's Neonatal Early-Onset Sepsis Calculator (Fig. 1) at <https://neonatalsepsiscalculator.kaiserpermanente.org/>.

Results

- From February 7, 2017 until February 26, 2018, 124 neonates were admitted to the NICU due to mother's chorioamnionitis status and treated empirically with antibiotics. Due to recording and EPIC issues, only 116 neonate's charts were able to be accessed and reviewed on EPIC.

Risk per 1000/births			
EOS Risk @ Birth			
EOS Risk after Clinical Exam			
	Risk per 1000/births	Clinical Recommendation	Vitals
Well Appearing		No culture, no antibiotics	Routine Vitals
Equivocal		Blood culture	Vitals every 4 hours for 24 hours
Clinical illness		Empiric antibiotics	Vitals per NICU

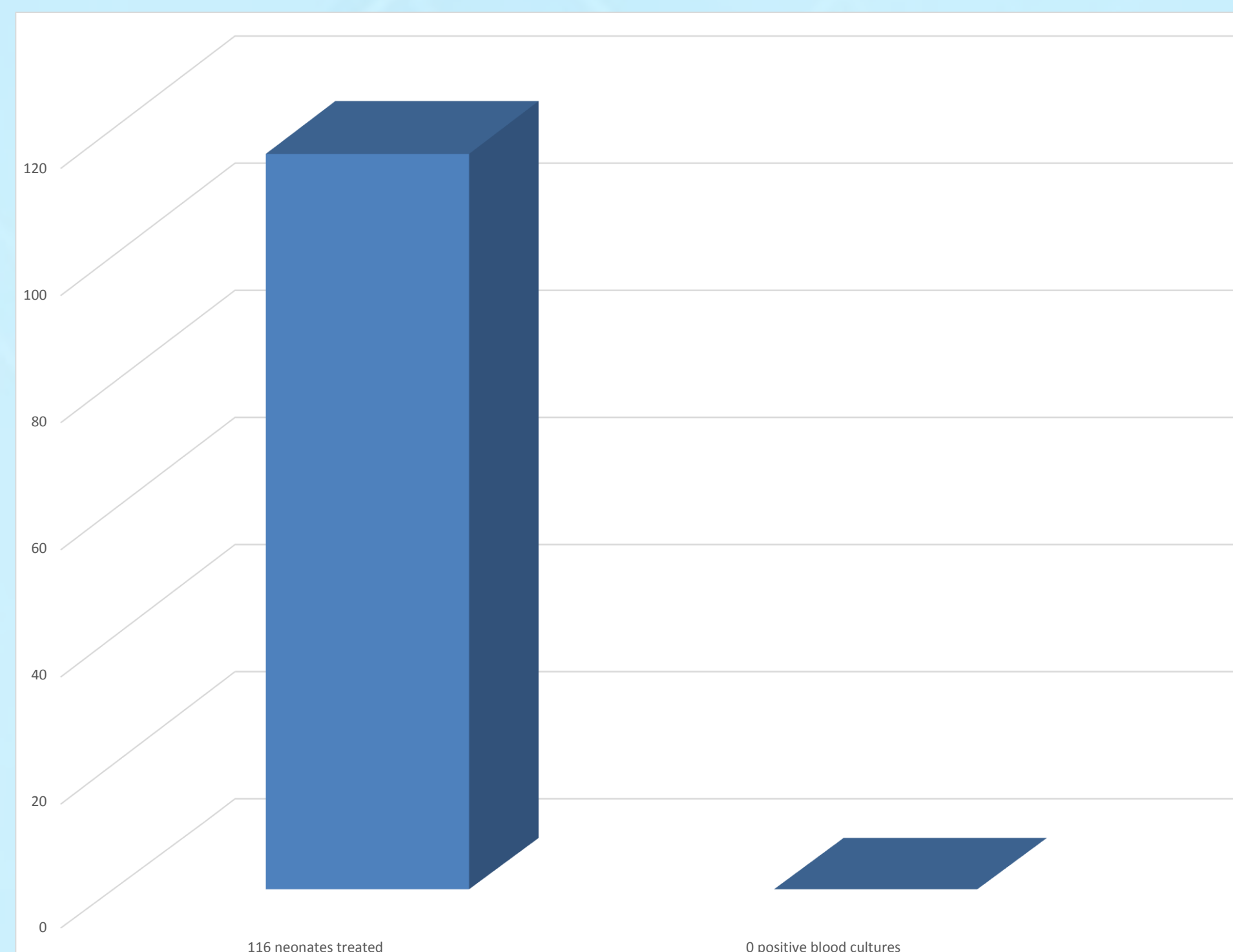
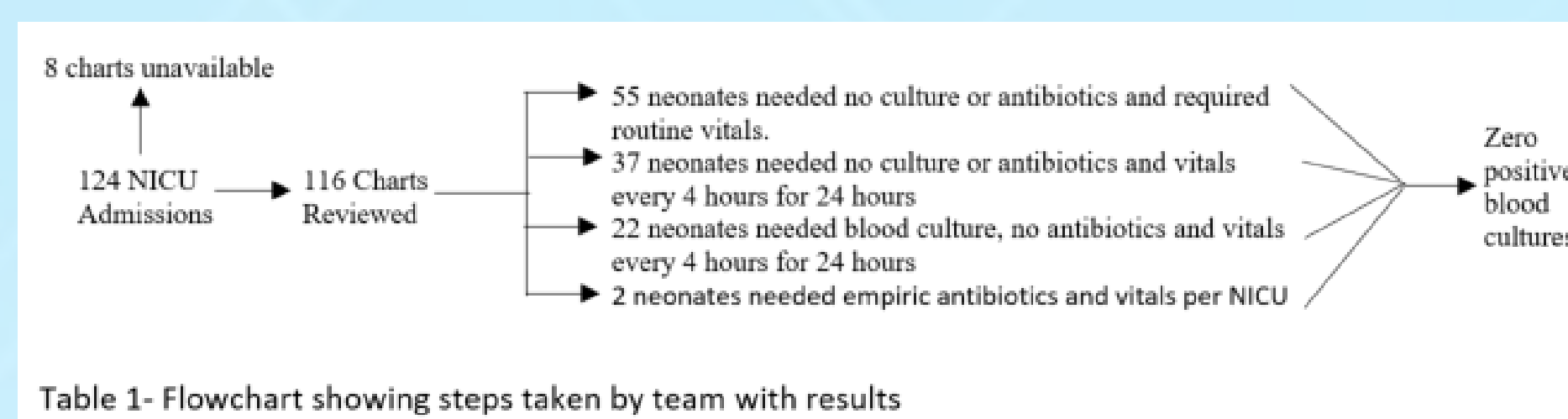
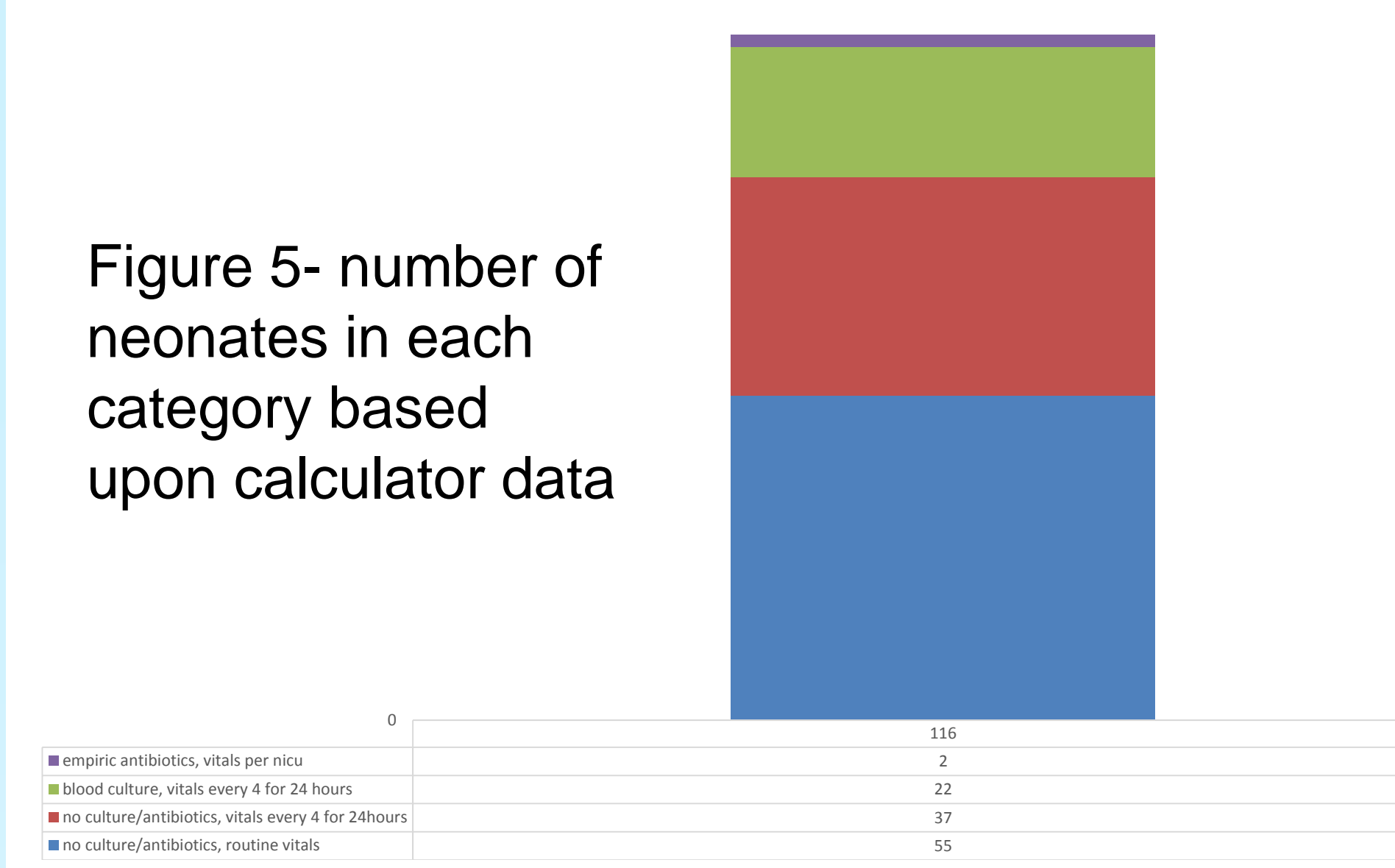


Figure 5- number of neonates in each category based upon calculator data



- 20.7% (24 out of the 116)-blood cultures
- 1.7% (2 out of 116)- empiric antibiotics.
- 198.5mins- average time spent in NICU.
- 0 positive blood cultures.

Discussion

- The Kaiser Sepsis calculator provides insight for physicians dealing with neonates born to a mother diagnosed with chorioamnionitis and appears valid in our patient population.
- Reducing the antibiotic usage will save the neonates from the potential adverse effects of hearing and renal issues in neonates
- Support new measures that can safely increase bonding between mother and child should be supported
- Reduce costs associated with NICU stays

Project Relationship to SELECT principles

- fewer adverse effects from antibiotics
- more efficient use of resource

Followup- 5 months post implementation to verify appropriateness

Conclusions

The current practice of treating every baby whose mother has been diagnosed with chorioamnionitis with a rule out sepsis evaluation and antibiotics is not a valid practice. Implementation of a sepsis calculator can safely decrease the number of babies empirically treated with antibiotics, reduce the adverse effects of antibiotic usage, save money and decrease the grief parents experience when separated from their newborn after delivery.

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