

Denver Health Newborn Nursery Antibiotic Stewardship Journey

2017

A decorative graphic consisting of several horizontal lines of varying lengths and colors (teal, light blue, white) extending from the right side of the slide towards the center.

Where we started

- Up until this year, our approach was ‘individualized’, with some basic guidelines:
 - Evaluate on a case by case basis
 - Risk factors including:
 - maternal temp
 - PROM
 - GBS
 - Preterm
 - ‘pus’ in the amniotic fluid
 - maternal/fetal tachy
 - uterine tenderness
 - Higher maternal temp, and/or increased number of RFs → more likely automatic ‘rule-out’
 - CBC, BCx, CRP at 48 HOL
 - Fewer RFs → more likely to just ‘observe’ in house x 48 hours.

Where we started

- Infants on IV antibiotics CAN room in with mom, so almost all were kept with mom
- Heavily relied on CRP at 48 hour mark, to determine whether infant 'ruled-in'.
- We taught the residents that blood culture is 'gold standard' but not perfectly reliable in newborn
 - Small volume, pre-treated by antepartum antibiotics

Where we started

- We did not ‘exactly’ follow the CDC guideline (i.e. we did not consider all maternal fevers as ‘chorioamnionitis’)
- Multiple reasons for this:
 - Historical approach already in place that seemed to be working
 - Concerns regarding number of evaluations per CDC recommendations

Where we started

- We felt our hospital's major antibiotic stewardship 'challenge' was lack of standardization, rather than number of kids started on ABX
 - nation-wide estimated abx rates between ~6-10% (Escobar 2014); ours ~3%

January 2017

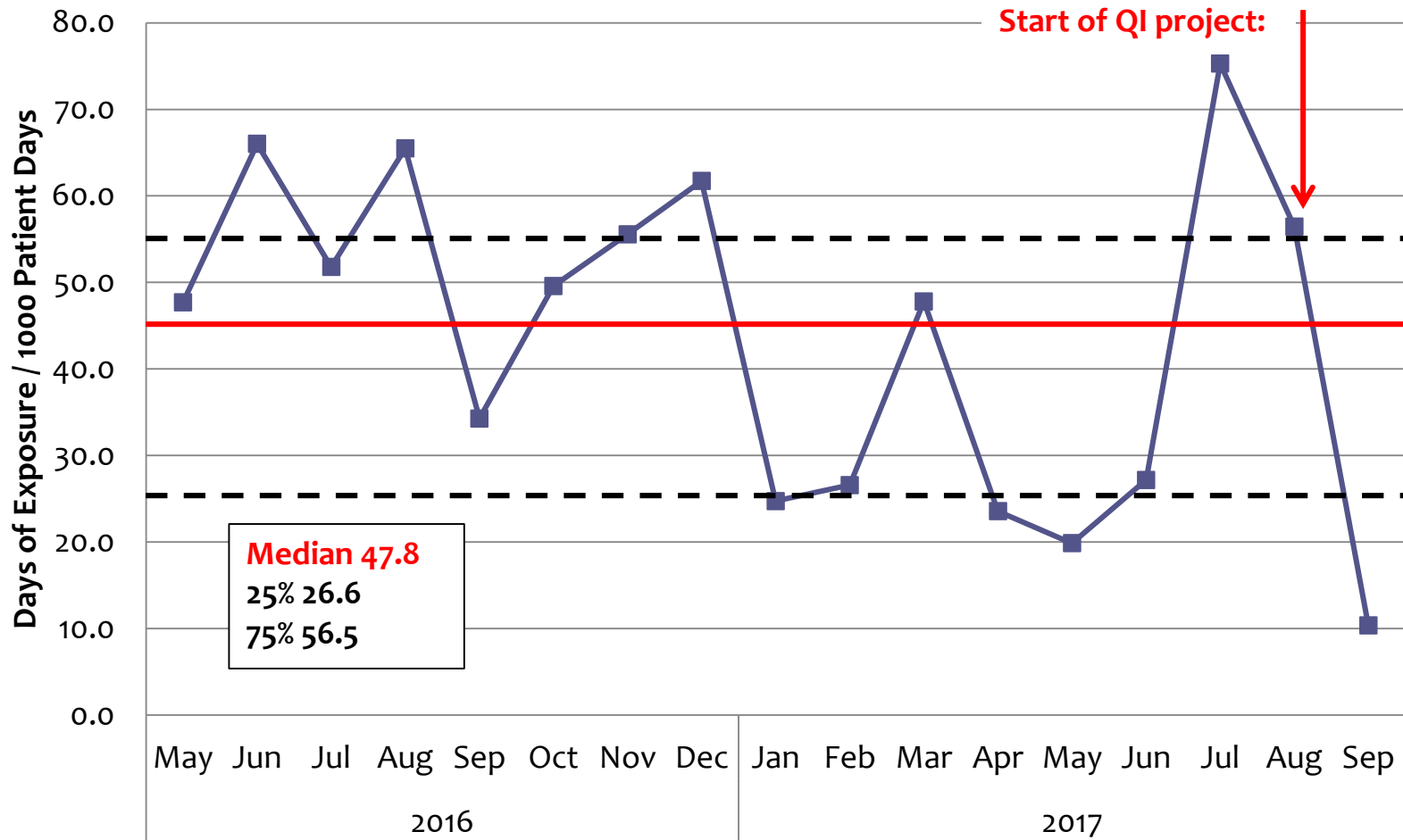
- DH participated in VON Antibiotic Stewardship QI project
- Major areas identified for improvement:
 - Standardization of who gets evaluated
 - Better evidence-based approach to who gets treated for the full 7 days
- Baseline data – AUR ~50/1000 pt days; ~3% of infants placed on IV antibiotics

Antibiotic Stewardship

- Participation in VON Antibiotic Stewardship Webinars
- Plan for QI
 - Standardize our approach by using the Kaiser Sepsis Calculator
 - More reliance on blood culture results, especially in asymptomatic babies
 - Plan for CRP T.B.D. (likely to be used as adjunct in cases where clinical picture not c/w BCx results)

Our Data So Far

Antibiotic Usage Rate



Baseline Avg AUR – ~50/1000 pt days

Major Insights

- BCx more reliable than we realized
- CRP not always telling us what we thought it was
- Reasonable evidence that, although you should ‘never trust a newborn’, it’s possible that you can trust an asymptomatic newborn

To Be Determined

- Will standardization increase or decrease our abx usage rates?
 - Our historical *initiation* rate was lower than CDC recommendations
 - Our historical *length of treatment* rate was probably longer than it should be

To Be Determined

- Standardization is needed for evidence-based care, and KSC is evidence-based
- Antibiotic Stewardship is important, but will the Kaiser Sepsis Calculator be the right answer?
- Reliance on BCx will likely be the driver for our (hopefully) decreased AUR, as CRP is elevated in large number of babies

References

- Escobar, et al. Stratification of Risk of Early-Onset Sepsis in Newborns ≥ 34 weeks Gestation. *Pediatrics* January 2014, Vol 133 (1)