

# Reducing the Use of Empiric Acyclovir in Low Risk Neonates Admitted for Sepsis Evaluation

Lauren Bradford, Paige Darnell,  
Peyton Wilson, Christine Walsh-Kelly,  
Ravi Jhaveri, Ashley Sutton



## Disclosures

- The authors have nothing to disclose



## Background

- Fever is a common reason for admission in the neonatal period
- Neonatal period is a vulnerable time for HSV infection due to risk of maternal transmission
- Herpes Simplex Virus (HSV) infection can have devastating consequences in neonates
- Uncertainty exists on when to initiate empiric acyclovir in febrile neonates
- Empiric acyclovir use in infants without HSV risk factors increases cost, risk and potentially length of stay without benefit

## QI Initiative

- Multi-disciplinary team formed
- Byington et al: Care Process Model (CPM) for HSV Risk Stratification for infants with fever or hypothermia
  - High Risk Factors: seizure, abnormal CSF findings (pleocytosis, RBCs), septic appearance, vesicular skin lesions, elevated LFTs
- Retrospective chart review
  - Infants < 1 year initiated on acyclovir during a 1 year period (4/2014-4/2015)
  - Results: 37 infants, 3 cases (2 known from OSH)
    - Only 36.1% met high risk criteria
    - CPM applied retrospectively did not miss any cases of HSV disease

## Initiative Aims

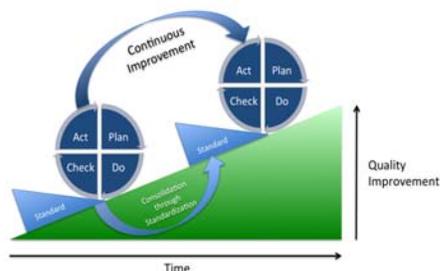
- Reduce by 50% the use of empiric acyclovir in low-risk infants under 90 days who present to UNC Children's Hospital for fever or hypothermia
- Increase the rate of complete diagnostic testing in infants categorized as high-risk for HSV infection to 50%
- Decrease the use of empiric acyclovir in infants > 42 days of age without clinical indications for testing/treatment by 90%

### Population

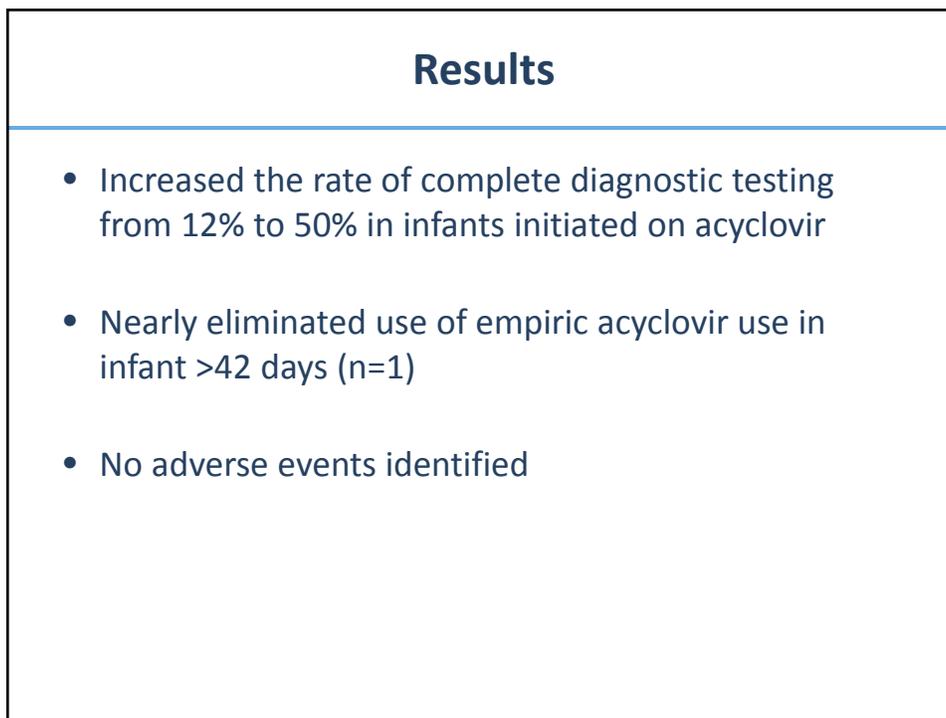
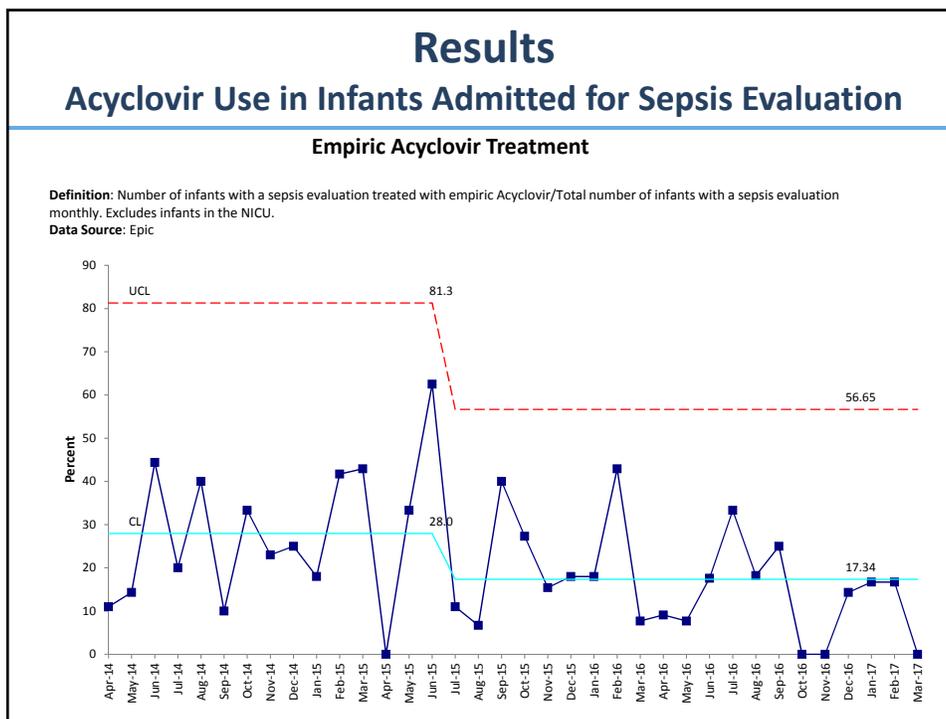
- Inclusion Criteria: age < 90 days with fever or hypothermia at presentation
- Exclusion Criteria: treatment initiated at an Outside Hospital (OSH) or Neonatal Intensive Care Unit (NICU), severity of illness precluding collection of all diagnostic samples or immunocompromised

## Key Interventions

- Iterative PDSA cycles
  - Creation and implementation of a UNC guideline/recommendation for testing and treatment of HSV
    - Revisions to guideline based on testing and feedback
  - Educational Survey
    - Assess knowledge gaps, provide teaching
  - Education of providers managing neonates on guideline
    - Residents
    - EM physicians
    - Hospitalist/PICU groups







## Conclusions

- QI interventions including a local guideline based on a CPM effectively:
  - Reduced use of empiric acyclovir in febrile neonates at low-risk for HSV infection
  - Increased complete recommended testing when HSV is suspected
- QI project successful in promoting antimicrobial stewardship in a small group of patients
- Goal to continue expansion of our guideline for empiric acyclovir use to other services and hospitals taking care of neonates

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## Questions?

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