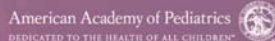


## Prevalence, Risk Factors, and Outcomes of Pediatric Bacteremic Pneumonia

Cristin Q. Fritz, MD, MPH/ Vanderbilt

Kathryn M. Edwards, MD, Wesley H. Self, MD, MPH, Carlos G. Grijalva, MD, MPH, Yuwei Zhu, MD, MS, Sandra R. Arnold, MD, Jonathan A. McCullers, MD, Krow Ampofo, MD, Andrew T. Pavia, MD, Evan J. Anderson, MD, Richard G. Wunderink, MD, Anna M. Bramley, MPH, Seema Jain, MD, Derek J. Williams, MD, MPH



VANDERBILT UNIVERSITY  
MEDICAL CENTER

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The speaker Cristin Fritz has no financial relationships to disclose or COIs to resolve

## Background

Pneumonia is the most common serious infection in childhood

- Among the top 3 reasons for pediatric hospitalization in the US

Studies examining the prevalence and impact of bacteremia in children hospitalized with pneumonia are limited

Blood cultures obtained based on clinical discretion in prior studies

## Objective

To estimate the prevalence, risk factors, and outcomes of bacteremic pneumonia in a cohort of children with systematic blood culture collection.

## Study Population

### CDC Etiology of Pneumonia in the Community (EPIC) Study

Prospective surveillance cohort of community-acquired pneumonia hospitalizations in children <18y at 3 US institutions, Jan 2010-Jun 2012

#### Inclusion Criteria

1. Evidence of acute infection (eg, fever)
2. Evidence of acute respiratory illness (eg, cough)
3. Radiographic evidence of pneumonia

#### Exclusion Criteria

Recent hospitalization, severe immunosuppression, tracheostomy, clear alternative diagnosis



## Methods

Blood cultures were obtained for all patients enrolled in the study

Bacteremia was defined as isolation of a pathogen (contaminants excluded) by blood culture collected within 72 hours of admission

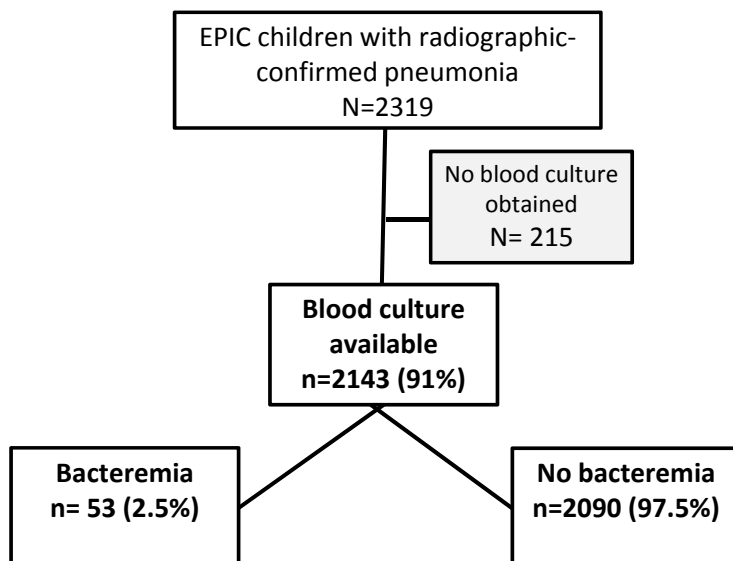
## Analysis

Compared characteristics of children with and without bacteremia using Fisher's exact or Wilcoxon rank-sum tests.

Compared outcomes including length of stay, intensive care admission, and invasive mechanical ventilation or shock by bacteremia status

- using Cox proportional hazards (LOS) and logistic regression (ICU admission, IMV or shock) models

## Study Population



## Pathogens

The most common pathogens:

- *Streptococcus pneumoniae* (n=22, 42%)
- *Staphylococcus aureus* (n=6, 11%)
- *Streptococcus pyogenes* (n=4, 8%)

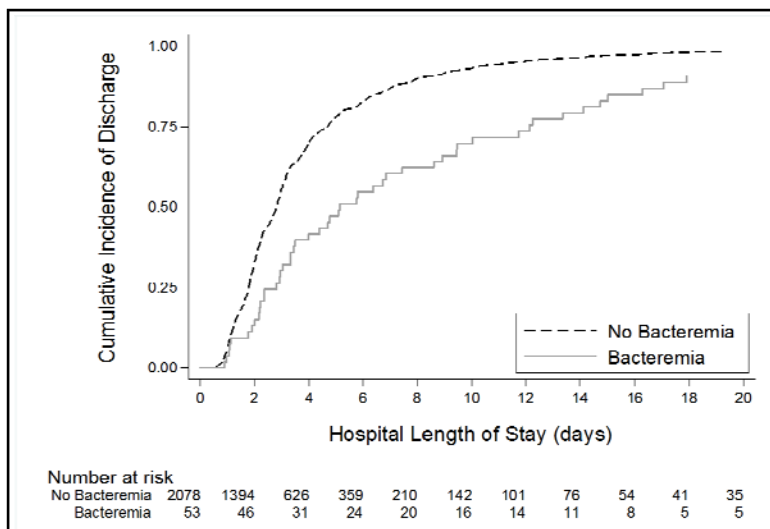
## Predictive Characteristics

- Characteristics associated with bacteremia included:
  - male sex
  - increased temperature
  - presence of parapneumonic effusion
  - lack of chest indrawing or wheezing.

## Outcomes

- Children with bacteremia had
  - longer LOS (adjusted hazard ratio 0.61, CI: 0.59-0.63)
  - increased odds of ICU admission (adjusted odds ratio 3.71, CI: 3.02-4.55)
  - Increased odds of IMV or shock (adjusted odds ratio 4.31, 95% CI: 2.31-8.03)

## Hospital Length of Stay for Children Hospitalized with Pneumonia with and without Bacteremia



## Conclusions

Bacteremia is uncommon, but associated with more severe outcomes

Targeting higher-risk individuals may improve the yield of blood cultures in this population

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### Co-authors

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Derek Williams

Yuwei Zhu

Wesley H. Self

Carlos G. Grijalva

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Kathryn M. Edwards

#### **University of Utah**

Johnathan McCullers

Krow K. Ampofo

Andrew T. Pavia

#### **University of Tennessee, Memphis**

Sandra R. Arnold

Jonathan A. McCullers

#### **Northwestern University**

Evan J. Anderson

Richard G. Wunderink

#### **CDC**

Anna M. Bramley

Seema Jain

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