**Abstract:**

**Background:** While there have been studies in adults reporting discordant empiric antibiotic treatment associated with poor outcomes, this area is relatively unexplored in children and neonates despite evidence of increasing resistance to recommended first-line treatment regimens.

**Methods:** Patient characteristics, antibiotic treatment, microbiology and 30-day all-cause outcome from children <18 years with blood-culture-confirmed bacterial BSI were collected anonymously using REDCap™ through the Global Antibiotic Prescribing and Resistance in Neonates and Children (GARPEC) network from February 2016-February 2017. Concordance of early empiric antibiotic treatment was determined using EUCAST interpretive guidelines. The relationship between concordance of empiric regimen and 30-day mortality was investigated using multivariable regression.

**Results:** 452 children with blood-culture-positive BSI receiving early empiric antibiotics were reported by 25 hospitals in 19 countries. 60% (273/452) were under the age of 2 years. *S. aureus, E. coli* and *Klebsiella spp.* were the most common isolates and there were 158 unique empiric regimens prescribed. 15.3% (69/452) of patients received a discordant regimen and 7.7% (35/452) died. 6% (23/383) of patients with concordant regimen died compared to 17.4% (12/69) of patients with discordant regimen. Adjusting for age, sex, presence of comorbidity, unit type, HAI and Gram stain, the odds of 30-day mortality were 2.9 (95%CI:1.2-7.0, p=0.015) for patients receiving discordant early empiric antibiotics.

**Conclusions:** Odds of mortality in confirmed paediatric BSI are nearly 3-fold higher for patients receiving a discordant early empiric antibiotic regimen. The impact of improved concordance of early empiric treatment on mortality, particularly in critically ill patients, needs further evaluation.