111. Pediatric and Adolescent Sepsis Epidemiology and Clinical Characteristics, Emerging Infections Program, 2014–2015
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Background. Sepsis is an important contributor to mortality among children and young adults. However, recent studies focused on hospital management and burden estimation do not provide critical data to inform prevention efforts. We conducted detailed medical record reviews to describe the epidemiology and clinical characteristics of children and young adults with sepsis to inform prevention and early recognition targets.
Methods. We reviewed all blood culture, vital sign, laboratory, and cardiorespiratory results were categorized as positive, negative, or contaminant. For the BSI population, we included data obtained within 12 hours before or 24 hours after the acquisition of a positive blood culture. The control population included data greater than 12 hours before or 24 hours after the acquisition of a positive blood culture, and all data from patients without BSI.
Conclusion. We used multivariable logistic regression to identify the physiological characteristics of BSI.
Results. We analyzed 9,953 ICU admissions with 144 patient-years of vital sign and CRM data (1.3M hourly measurements). The average age was 59 years; the population was mostly Caucasian (81%) and male (56%). There were 5,671 (57%) admissions with >1 blood culture, and 744 (7%) had a BSI. The in-hospital mortality rate for patients with BSI was 28% vs. 12% for all others. The physiological signature of BSI was characterized by abnormalities in 12 parameters (Figure 1)—e.g., BSI was more likely in patients with a higher pulse and lower platelets. Several associations were nonlinear—e.g., temperature and WBC had U-shaped relationships with BSI. The internally validated C-statistic was 0.77.
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