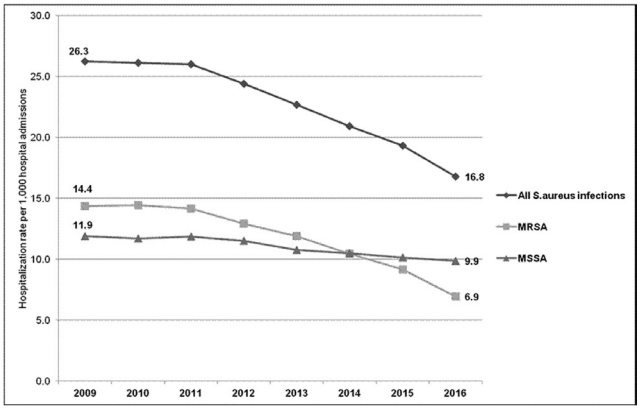
admissions ($P < 0.001$) (figure). MRSA infections declined 52% (14.4 in 2009 to 6.9 infections per 1,000 admissions in 2016, $P < 0.001$) while MSSA infections declined 17% (11.9 to 9.9 infections per 1,000 admissions, $P < 0.001$). DOT for anti-MRSA antibiotics declined from 38.0 to 24.5 per 1,000 patient-days.

Conclusion. Rates of pediatric hospitalization with *S. aureus* infection declined substantially over time. This was largely driven by decreased rates of MRSA hospitalizations, and we observed a corresponding decline in anti-MRSA antibiotic use. Further research is needed to better understand factors driving epidemiologic changes.

Figure. *S. aureus* hospitalization rate per 1,000 hospital admissions in 39 PHIS hospitals with continuous reporting, 2009–2016.

All S. aureus
infections



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2322. Reduced Vancomycin Susceptibility Among Pediatric *Staphylococcus aureus* Bloodstream Infections

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Background. Reduced vancomycin susceptibility (RVS) is considered to be present when the minimum inhibitory concentration (MIC) is equal to 2 µg/mL. RVS *Staphylococcus aureus* (SA) bloodstream infections (BSI) have been associated with worse outcomes than non-RVS BSI in adults but not been well studied in children.

Methods. We reviewed the electronic medical records of infants and children admitted to Penn State Children's Hospital with ≥1 blood culture positive for SA from 2005 to 2015. We abstracted demographic information, potential risk factors, laboratory results and clinical outcomes. We defined RVS as a vancomycin MIC = 2 µg/mL as determined by the clinical microbiology laboratory at the time of the infection. We used Chi square and Wilcoxon rank-sum tests to compare patient factors for RVS and non-RVS infections. Using a logistic regression adjusted for year and the presence of an infection-related complication, we calculated the odds of treatment failure for children with RVS and non-RVS BSI. For children with a central line in place at the time of the first positive culture, we also calculated the odds of treatment failure adjusted for year, presence of a complication and line removal. We defined treatment failure as death within 30 days of the first positive culture, recurrence of SA BSI within 30 days or a duration of bacteremia > 3 days.

Results. Of the 216 identified pediatric SA BSI, 139 (64%) had RVS: RVS was present in 63% of MSSA BSI and 65% of MRSA BSI, $P = 0.835$. There was no difference in age, sex, and racial distributions among children with RVS vs. non-RVS BSI. Similarly, hospitalization in the prior year, surgery within the prior 30 days, the presence of an underlying comorbidity or use of immunosuppressing medications were not more common for RVS vs. non-RVS BSI. RVS was not associated with an increased risk of treatment failure overall, odds ratio (OR)=1.34 (95% confidence interval: 0.71, 2.55), but did increase the odds of treatment failure if an indwelling central venous catheter was present and not removed, OR=3.14 (1.16, 8.54).

Conclusion. RVS is common among pediatric SA BSI. For central line associated SA BSI, RVS was associated with increased odds of treatment failure compared with non-RVS infections if the line was retained.

Disclosures. **All authors:** No reported disclosures.

2323. Unexpected Pediatric Presentation Patterns of Toxic Shock Syndrome

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Background. A subcategory of severe septic shock, toxic shock syndrome (TSS) represents up to 20% of pediatric septic shock in the United States. Diagnostic criteria for streptococcal TSS (STSS) and non-streptococcal TSS (NSTSS) were first published by the CDC in the early 1990s, with updates, respectively, in 2010 and 2011.

Methods. The Nationwide Children's Hospital electronic medical record was queried for inpatient hospitalizations with ICD-9/10 codes of interest between 1/1/2010 and 8/31/2017. The query returned 579 hospitalizations which were assessed for adherence to STSS and NSTSS criteria published by the CDC. 61 cases of TSS were identified: 27 STSS, 32 NSTSS. The prevalence of organ system involvement was quantified, and organ system involvement unanticipated by CDC criteria was examined for prevalence, quality and chronology.

Results. TSS patients were predominately female (62%) with an average age of 12. The most common presentation of TSS was with hypotension (93%), fever (82%) and rash (72%). Findings unanticipated by CDC criteria include: pyuria in STSS (41%), pulmonary involvement in NSTSS (66%) and coagulation abnormalities in NSTSS (92%). Pyuria in STSS was commonly accompanied by protein (73%) and leukocyte esterase (55%) on urinalysis. Pyuria also commonly presented with hematuria (45%). Radiographic evidence of pulmonary involvement in NSTSS was typically described as bilateral/diffuse airspace disease, presenting simultaneously with pulmonary edema and pleural effusions. Abnormalities in PT/PTT associated with NSTSS were commonly found within the first few hours of admission and began normalizing by the next day; d-dimer assays were abnormal in the six instances in which they were assessed.

Conclusion. This study suggests that early signs and symptoms of pediatric TSS may exist beyond those described by existing guidelines. The organ systems found to be involved in this review are often found early in the clinical course and can be assessed by noninvasive methods. Contextualization of these findings within the narrative of TSS might help clinicians better detect and diagnose a disease associated with significant patient morbidity and mortality. They may also aid in understanding the results of toxic shock surveillance efforts.

Disclosures. **All authors:** No reported disclosures.

2324. Long-Term Health Outcomes of Children Evaluated for Unexplained Fevers in a Pediatric Infectious Diseases Clinic

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Background. Unexplained fever is a common reason for outpatient referral to pediatric infectious diseases (PID) subspecialists. A previous study at our center concluded that most children referred to PID for prolonged or recurrent unexplained fever have self-limited illnesses and receive no specific diagnosis. Studies looking at long-term outcomes of such patients have not been published.

Methods. The study cohort consisted of 156 patients seen in the PID clinic for unexplained fever from 2008 through 2012 who were not given a definitive diagnosis or were thought to have sequential self-limited illnesses, plus 20 patients seen during that time who were diagnosed with periodic fever, aphthous stomatitis, pharyngitis, and adenitis (PFAPA) syndrome. A scripted telephone interview with consenting parents or guardians who could be reached was conducted in 2018.

Results. Attempts were made to contact all 176 families; to date, 100 interviews have been completed. Thirteen of the children initially had prolonged, 45 recurrent, and 25 periodic fever; 17 had PFAPA. The mean follow-up period was 8 years. Only 2 patients developed new diagnoses in the interval since their initial PID visit. One who was thought to have PFAPA developed genital ulcers and was diagnosed with Behcet's disease 4 years after the PID visit. Another who was thought to have self-limited, prolonged fever was eventually diagnosed with juvenile idiopathic arthritis. None of the remaining 98 children developed serious diagnoses. However, 14 of these children reportedly have continued fevers; 9 of the children suffer from anxiety, and 4 of the remaining 5 report good general health.

Conclusion. Most children seen in PID clinic for unexplained fever who were not given a specific diagnosis remained well after their initial visit. Two were diagnosed with autoinflammatory diseases after the appearance of telltale signs and symptoms, and none were diagnosed with immunodeficiency or cancer. The children who reportedly continue having fevers but are otherwise healthy warrant further study, with particular attention to their families' health and illness beliefs.

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2325. Bloodstream Infections in Hospitalized Children in the United States: Incidence, Pathogens, and Regional Differences

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