At all centers actual BSI rate was lower than the expected rate for that center in the POST period. UVA and Duke showed a baseline decrease and Pennsylvania Hospital showed a downward trend in infection rates. There was an approximate decrease in expected bloodstream infection events at Pennsylvania Hospital by 7 events, at UVA by 22 events and at Duke by 23 events. Overall, all three centers saw a decrease in their expected infections after COVID-19 infection prevention measures were implemented.

### Table 1. Percent reduction in Bloodstream Infection at each center.

| Outcome (site) | Pre-Rate | Post-Rate | Percent Reduction | P value |
|---------------|----------|-----------|-------------------|---------|
| Blood stream infection, BSI | | | | |
| Penn | 1.03 | 0.78 | 24% | 0.54 |
| UVA | 2.66 | 1.28 | 52% | 0.01 |
| Duke | 1.96 | 1.09 | 34% | 0.11 |
| BSI Pooled estimate | | | -41% | 0.004 |

### Conclusion

In this preliminary analysis, we found a reduction of BSI after the implementation of COVID-19 infection prevention measures. Additionally, there were fewer viral infections, though there were a limited number of episodes. Further analyses of multicenter data and a larger number of patients will elucidate the significance of these findings and the role some of these IP measures such as universal masking may have in infection prevention in the NICU.

### Disclosures

All Authors: No reported disclosures

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182. Back to The Future: Increasing Penicillin Susceptibility among Methicillin-Susceptible *Staphylococcus aureus* Osteoarticular Infections in Children

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### Session: O-36. Trends in Pediatric Bacterial Disease

#### Background

Starting in the late 1940s–1950s *Staphylococcus aureus* isolates gained resistance to penicillin largely through the acquisition of β-lactamases. In recent years, some centers have described an increase in the proportion of methicillin susceptible *S. aureus* (MSSA) which are also susceptible to penicillin (PSSA). There are little data on the prevalence or clinical significance of PSSA in children. Acute hematogenous osteoarticular infections (AHOAI, including osteomyelitis and septic arthritis) are the most common manifestation of invasive *S. aureus* disease in children. We investigated the prevalence of penicillin susceptibility among MSSA AHOAI isolates at two children’s hospitals.

#### Methods

MSSA AHOAI isolates were obtained through surveillance studies at Texas Children’s (TCH) and St. Louis Children’s Hospitals (SLCH) from 1/2011-12/2019. All isolates underwent PCR for *blaZ* β-lactamase, PVL genes and agr group. All *blaZ* negative isolates underwent penicillin susceptibility testing using macrobroth dilution. Isolates which were *blaZ* negative and had a penicillin MIC ≤ 0.125 μg/ml were regarded as PSSA.

#### Results

329 unique isolates were available and included in the study. The median patient age was 9.2 years (IQR: 5.1-12.2). Overall, 22 isolates were found to be penicillin susceptible (6.7%). No PSSA isolates were detected prior to 2015 but increased yearly thereafter; by the final study year 20.4% of isolates were PSSA (p=0.001, Figure 1). Patients with PSSA isolates were slightly older than those with resistant isolates (median age 11.8 years vs. 9.1 years, p=0.08) and PSSA were more commonly identified at SLCH (12.9% vs. 5.2%, p=0.04). PSSA were similar to penicillin-resistant isolated in terms of agr group and PVL carriage as well as clinical presentation and outcomes.

#### For PSSA, the MIC₅₀ for penicillin (0.06 μg/ml) was much lower than that for other β-lactams (Figure 2).

### Figure 1: Temporal Trends in PSSA

The figure describes the relative frequency of penicillin susceptible *S. aureus* (PSSA) over time among MSSA osteoarticular infection isolates in children.

### Figure 2. β-Lactam MIC₅₀s in Penicillin Susceptible Isolates

Distribution of MIC₅₀s to penicillin, ampicillin, cefazolin, cefalexin and oxacillin among PSSA isolates.

#### Conclusion

PSSA appears to be increasing among AHOAI isolates in US children, although geographic variability does occur. Overall, PSSA isolates are associated with similar antibiotic susceptibility as penicillin-resistant isolates. Penicillin susceptibility testing may serve as an avenue for future stewardship intervention in staphylococcal infections.

#### Disclosures

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183. Decrease in Invasive Pneumococcal Disease in 7 United States Children’s Hospitals during the COVID-19 Pandemic

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### Session: O-36. Trends in Pediatric Bacterial Disease

#### Background

During the 2020 SARS-CoV-2 pandemic, physical distancing and mask use guidelines were implemented resulting in a decline in the number of infections caused by influenza, respiratory syncytial virus and otitis media. A surveillance analysis from England and Taiwan showed a decline in invasive pneumococcal disease (IPD) (Clin Infect Dis. 2021;72: e65-75 and J Infect. 2021;82:296-297). We hypothesized that COVID mitigation efforts resulted in a decrease in incidence of pediatric IPD within the U.S. during 2020 compared to previous years.

#### Methods

We reviewed all cases of IPD among 7 children’s hospitals from the U.S. Pediatric Multicenter Pneumococcal Surveillance Group from 2017-2020. IPD was defined by the isolation of *Streptococcus pneumoniae* from normally sterile sites (eg. blood, cerebrospinal, pleural, synovial or peritoneal fluid). Pneumococcal pneumonia was defined as an abnormal chest radiograph in the presence of a positive blood, pleural fluid or lung culture. Mastoiditis was identified by positive middle ear, subperiosteal abscess or mastoid bone culture. Serotypes were determined by the capsular swelling method. Hospital admission numbers were obtained for incidence calculations. Statistical analyses were performed using STATA11. A p< 0.05 was considered significant.