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Background. Guidelines for the diagnosis and treatment of pediatric community-acquired pneumonia (CAP) were updated in 2011. It is unknown how well guidelines are used by physicians to manage CAP for children who require hospitalization.

Methods. Diagnosis codes were used to identify patients from 4 months to 18 years old with a diagnosis of CAP between January 2012 and December 2015. Hospital records were reviewed to confirm the diagnosis of CAP and to determine if the patient demographics, risk factors, clinical characteristics, and treatment outcomes. Patients who were immunocompromised for any reason, had cystic fibrosis, a current tracheostomy, or other concurrent bacterial illnesses were excluded. Factors for children who were treated according to guideline recommendations and those who were not were compared using Fisher’s exact test or Mann-Whitney test. A multivariable logistic regression analysis evaluated the relationship between patient factors, clinical characteristics, and guideline adherence. Data analysis was performed using Stata 14.

Results. Of the 154 children with CAP, 90 (58%) were treated according to the guidelines. In non-adherent cases, antibiotic coverage was too broad in 23 (36%) patients, included unnecessary MRSA coverage in 11 (17%), and was of prolonged duration in 20 (31%) patients. Only 10 (16%) had antibiotic coverage that was too narrow. The appropriate proportion of patients with a negative initial S. aureus nasal culture on days 1 and 2 of therapy according to antibiotic therapy (P < 0.01). There were no significant differences in the number of chest X-rays performed, complications, duration of fever, supplemental oxygen use, and need for intensive care unit admission. On regression analysis, older age (P = 0.002) and lower discharge S. aureus nasal cultures were independently associated with decreased adjusted odds of guideline adherence, odds ratio (OR) = 0.8, 95% confidence interval (CI) [0.66, 0.95], and 0.09, [0.01, 0.59], respectively.

Conclusion. guideline adherence is associated with similar outcomes, shorter LOS, and duration of treatment compared with non-adherence. Further studies should investigate whether older children are less likely to receive recommended antibiotic therapy for CAP.

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1604. Use of MRSA Nasal Swab to Guide Empiric Antibiotic Treatment of Hospital Acquired or Community Acquired Pneumonia in a Pediatric Population

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Background. Current PIDS/IDSA guidelines recommend the use of MRSA empiric coverage in the case of hospital acquired pneumonia (HAP) and in community acquired pneumonia (CAP) if patients have risk factors or clinical characteristics consistent with MRSA infection. Retrospective studies in adult patients have shown the MRSA PCR nasal swab to have a negative predictive value of 99% in patients treated for pneumonia in the inpatient setting, making the MRSA nasal swab a potential tool to guide de-escalation of empiric antibiotics. No published studies to date have examined the sensitivity and specificity of MRSA PCR nasal swab in pediatric populations.

Methods. A cohort of children was identified by cross-matching internal physician and laboratory billing data from the past 10 years at IU hospitals in the Indianapolis area for pneumonia. An initial pool of 500 patients were identified. Patients less than 25 years of age were eligible. Patients were excluded if they had medical conditions such as Cystic Fibrosis, Chronic Lung Disease, or cavitary pneumonia secondary to IV drug use. Chart review identified a total of 28 patients that met diagnostic criteria for pneumonia, had culture data and had a MRSA PCR nasal swab performed during treatment.

Results. In the cohort, 5 patients had positive MRSA nasal swab and positive cultures for MRSA. Two patients had positive MRSA swab with negative cultures. Twenty-one patients had negative MRSA nasal swabs and cultures without MRSA growth. No patients were identified with a negative MRSA nasal swab that grew MRSA in cultures. In this population the MRSA nasal swab had a sensitivity of 100%, specificity of 91%, positive predictive value of 21%, and a negative predictive value of 100%. The patients with negative MRSA swab and negative cultures, 66% were treated with vancomycin. If MRSA nasal PCR was used to guide treatment, 71% of the patients with a negative nasal swab had potential to discontinue MRSA empiric antibiotics sooner.

Conclusion. The MRSA PCR nasal swab has a high negative predictive value in this pediatric population of inpatients treated for HAP/CAP. This is consistent with results from adult studies. The high negative predictive value makes the MRSA PCR nasal swab a potential tool as a rapid diagnostic test to guide empiric antibiotic therapy.

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1605. Consistent Differences between Wound Culture and Osteoarticular Infection Staphylococcus aureus Susceptibilities and Institutional Antibiograms at a Children’s Hospital
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Background. Aggregate hospital and unit-based antibiograms guide empiric antibiotic decision making but may not best inform the microbiology of certain important presentations. In this analysis, Staphylococcus aureus (SA) susceptibilities specifically from wound specimens and in acute osteoarticular infections (OAI) were compared with available antibiograms at a freestanding children’s hospital.

Methods. Encounter, billing, and electronic microbiology surveillance data were utilized to identify SA wound cultures and acute OAI (osteomyelitis and septic arthritis) cases at Women and Children’s Hospital of Buffalo, from 2013 to 2016. OAI cases’ medical records were reviewed to ensure diagnostic accuracy. SA wound and OAI specific data were tabulated and compared with published institutional antibiograms. General pediatric locations were defined as community clinics, the emergency room, and general pediatric wards, with intensive-care and oncology units excluded.

Results. Significant discordance existed between general pediatrics SA susceptibilities in the aggregate antibiograms, with both wound cultures and OAI cases, for all 4 years: Figures 1 and 2. The proportion of SA that was methicillin-susceptible (MSSA) was consistently higher in wound specimens than in aggregate data (e.g., 63% vs. 53% in 2016; p < 0.01), and was increasing 63% in 2013–16 vs. 53% in 2013–14, p < 0.01. Clindamycin (clinda) susceptibility for all SA (MSSA + MRSA) was higher in wound cultures than aggregate data, 89% vs. 82% for 2013–2015 (p < 0.01). For OAI cases, the proportion of MSSA was consistently ~20% higher than in aggregate data (2016: 79% vs. 53%, p = 0.05), and clinda susceptibility for all SA in this group appears to be decreasing: 83% in 2015–16 vs. 96% in 2013–14, p = 0.13.

Conclusion. While our institutional antibiograms created uncertainty, a wound culture review indicated that clinda remains an appropriate empiric choice for community-onset skin and soft-tissue infections. Conversely, an OAI specific analysis revealed a predominance of MSSA and higher rates of clinda-resistant SA, leading us to reapprove the empiric use of clinda in this subset. Pediatric facilities should emphasize stratified, specimen and clinical-context specific—rather than aggregate—antibiograms, especially for SA.

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1606. Adverse Effects from Antibiotics for Acute Respiratory Tract Infections in Children: Comparison of Two Data Sources
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Background. Outpatient acute respiratory tract infections (ARTIs) account for the majority of antibiotic exposure in children. Thus, it is essential to understand the outcomes and adverse effect profiles of different therapeutic approaches to treating these common infections. In a study comparing the effectiveness of narrow- and broad-spectrum antibiotics for treatment of ARTIs, we compared rates of adverse effects reported by patients to rates obtained by the electronic health record.

Methods. We used a retrospective cohort and a prospective cohort, both of which included children treated with antibiotics for an ART (acute otitis media, Group B streptococcal, acute sinusitis) in a network of 31 pediatric primary care practices. In the retrospective cohort, adverse drug effects including diarrhea, candidiasis, non-candida rash, other allergic reaction, vomiting, and unspecified adverse