

Presentation Type:

Poster Presentation

Geographic Evaluation of Georgia Vaccination Disparity Among Laboratory-Confirmed Influenza Cases in a Children's Hospital

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Background: Vaccination coverage among children aged ≤ 18 years in Georgia remains one of the lowest in the nation with 39.3% coverage. During the 2018–2019 influenza season, the CDC reported 142 pediatric deaths, 3 of which occurred in Georgia. In a time of increasing complexity of immunization schedules, increase severity with a high level of flu-related deaths and hospitalization, it is important to understand localized factors that contribute to decrease influenza immunization and increased flu-related hospital visits among children. **Methods:** Data include electronic medical record chart review of 5,827 laboratory confirmed Children's Healthcare of Atlanta visitor cases from October 1, 2016, to September 24, 2019. System-wide county level data included 3 pediatric hospitals, 5 primary care facilities, 8 urgent care facilities, and 2 outpatient clinics. Characteristics associated with disparities in vaccine were explored using univariate and multiple regressions analysis. Of those children with a primary care physician (PCP), 30% had flu vaccinations, whereas only 16.5% of those without a PCP had been vaccinated ($P \leq .00001$). There was a positive relationship between increased county influenza rate and percentage of children in county who were preschoolers < 5 years old ($r = 0.93$; $P \leq .05$). Moreover, 78% of children who received the flu vaccine ≤ 2 weeks prior to a confirmed flu diagnosis got the flu during peak flu periods ($r = 0.29$; $P \leq .05$). Predictors of increased flu rate per 1,000 children were associated with flu vaccines given ≤ 2 weeks before a lab confirmed flu diagnosis ($P \leq .02$). Children in counties that had a higher rate of flu during the peak period also had an overall higher rate of flu ($P \leq .005$). The higher the percentage of children who got flu during peak flu period, the lower the vaccination rate for the county ($P \leq .001$). The percentage of children ≤ 18 years old with no health insurance was associated with lower vaccination rates in

the county ($P \leq .004$). There appears to be a positive relationship between receiving flu vaccine 2 weeks prior to lab-confirmed flu diagnosis and onset of illness during the peak flu periods. Missed opportunities to obtain a flu vaccine by a PCP were associated with increased flu-related hospital visits and lower vaccination rates. Results may support pre-discharge hospital vaccinations and the promotion of flu vaccination education. Pediatric research is needed to facilitate localized PCP vaccination or pre-discharge hospital vaccinations prior to peak flu periods when hospital-related flu visits increase.

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Getting to the Heart of the Matter: Epidemiology of Surgical Site Infections Following Open Heart Surgery in Children

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Background: Surgical site infections (SSIs) following open heart surgery involving cardiopulmonary bypass (CPB) among pediatric patients are healthcare-associated infections associated with significant morbidity and mortality. At a pediatric acute-care facility, an increase in SSI incidence prompted an epidemiologic review. We describe the incidence of cardiac SSIs at our hospital; we identified risk factors and areas of practice variation to inform improvement initiatives. **Methods:** SSI cases following CPB at our hospital have been identified through routine surveillance using NHSN definitions since January 2016. An increase in cases was noted in mid-2018, prompting a common cause analysis with stakeholders across the preoperative, intraoperative, and postoperative care continuum. Areas of practice variability were identified, and an epidemiologic review was performed to determine risk

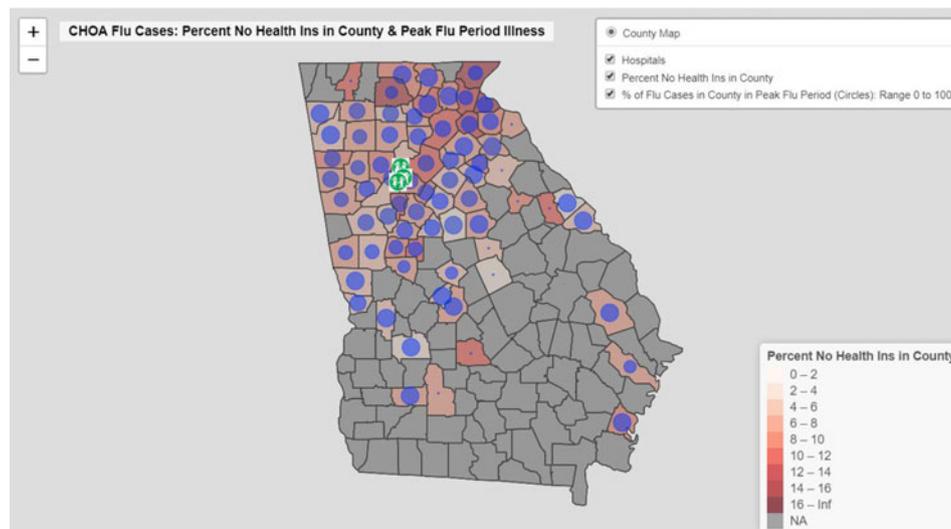


Fig. 1.

factors among cases compared to noncases between January 2016 and August 2018. The rate of SSIs and 95% confidence intervals were estimated, and univariate logistic regressions were fitted to estimate unadjusted odds ratios (ORs) for the association between each of the predetermined preoperative, intraoperative, and postoperative factors and developing an SSI. **Results:** Overall, 139 patients underwent surgery involving CPB between January 1, 2016, and August 31, 2018. Preoperative bathing was infrequently documented (9% among cases vs 5% among noncases; $P = .56$). Operating room observations identified frequent door openings and equipment crowding. Moreover, 11 patients (7.9%) developed a cardiac SSI, with 6 (14.3%) occurring in the first 8 months of 2018 ($P = .067$). There were no predominant pathogens; 3 of 11 cases were associated with methicillin-susceptible *Staphylococcus aureus*. Also, 9 cases were classified as deep incisional or organ-space SSI. Each hour increase in total CPB duration was associated with a 63% increase in odds of developing an SSI (OR, 1.626; 95% CI, 1.041–2.539). Each additional day of intubation (OR, 2.400; 95% CI, 1.203–4.788) and peritoneal dialysis (OR, 1.767; 95% CI, 1.070–2.919) during the first 3 days postoperatively were also associated with increased SSI risk. Postoperative documentation of wound assessment occurred in 60% of patients, with no difference between cases and noncases (55% vs 67%; $P = .42$). **Conclusions:** Using a mixed-methods approach, preoperative bathing, increased operating room traffic, and postoperative care around wounds and invasive devices were identified as areas of improvement toward safer surgical care. Although no unique organism or process explained the increased rate, determining risk factors and areas of practice variability through stakeholder engagement provided insight into opportunities to prevent SSIs.

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Hand Hygiene Compliance in a University Hospital in West Bank, Palestine: An Observational Study 2017–2019

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Fig. 1.

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Background: Worldwide, medical staff adherence to hand hygiene (HH), the most cost-effective measure to decrease healthcare-associated infections (HAIs), is ~40%–60%. The infection control program (ICP) at An-Najah National University Hospital (NNUH), a tertiary-care referral teaching hospital located in Nablus, in northern Palestine, monitors HH compliance by direct observations using the WHO observation checklist. In this descriptive study, we investigated the prevalence of HH across the institution during 2017–2019. **Methods:** The WHO multimodal strategy to enhance HH in healthcare settings was implemented at NNUH, a tertiary-care referral hospital, in 2017. HH compliance has been measured during routine patient care by direct observation by ICP team and anonymously by other trained observers. Results are reported on monthly basis to the administration and medical team (nurses and doctors), and corrective plans to increase the compliance are discussed. Training is reinforced with ultraviolet light and fluorescent alcohol-based hand rub. Yearly, staff are engaged in HH Day activities (Figs. 1 and 2). Leadership support is constant by



Fig. 2.