

Presentation Type:

Poster Presentation

Infection Prevention and Control Policies and Staffing: A**National Survey of Home Health Agencies in the United States**

Jingjing Shang, Columbia University School of Nursing; Ashley Chastain, Columbia University School of Nursing; U. Gayani Perera, Columbia University School of Nursing; Monika Pogorzelska-Maziarz, Thomas Jefferson University; Patricia Stone, Columbia School of Nursing

Background: Infection prevention and control (IPC) is a national priority in all healthcare settings, and IPC staffing characteristics have been linked to patient safety outcomes. However, there is a lack of knowledge about IPC in home healthcare (HHC), the fastest growing healthcare sector. Our aim was to better understand the current state of IPC in HHC, as well as the HHC staff involved with IPC policy implementation. **Methods:** A national survey was conducted between October 2018 and November 2019. The participants included (1) agencies recruited from a national HHC conference and (2) a national random sample of 1,501 agencies stratified by census region, ownership status, and rural or urban location. Survey items included staff influenza vaccination policies, antibiotic stewardship, infection surveillance, and IPC staffing. Descriptive statistics were computed, and differences by ownership were calculated using χ^2 and Student *t* tests.

Results: Of the 535 HHC agencies that responded to the survey (response rate, 33%), 64% were for-profit agencies. Overall, 30.8% of the agencies (17.9% for-profit, 57.6% nonprofit; $P < .01$) required staff influenza vaccination. Most nonprofit agencies (84.1%) and about half of the for-profit agencies (48.1%) offered free influenza vaccinations to staff ($P < .01$). During the past influenza season, 62.6% of agencies (81.5% nonprofit vs 51.6% for-profit; $P < .01$) had $\geq 75\%$ of their employees vaccinated for influenza, and 9.3% (2% nonprofit vs 13.5% for-profit; $P < .01$) reported that they did not track this data. Only 17.9% of HHC agencies used antibiotic prescribing guidelines, and 33.3% reported that they reviewed cases to assess the appropriateness of antibiotic administration and/or indication. Most HHC agencies (86%) reported collecting and reviewing infection data to identify trends, which was often done quarterly or more frequently. Almost every responding agency reported that the staff member in charge of IPC had other responsibilities including administrative, education/training, or quality improvement, and 33.5% of those personnel had received no specific IPC training. Also, ~6% of agencies (12.5% of government-owned agencies) reported that they currently did not have a staff member in charge of IPC. **Conclusions:** This is the first national study of IPC in HHC, which can be used as a benchmark for quality improvement initiatives in the home care environment. Compared to other healthcare settings, HHC agencies have substantial challenges related to IPC. Most HHC agencies do not have a staff member exclusively dedicated to IPC, and staff training is inadequate. Furthermore, a significant number of agencies have no staff influenza vaccination or antibiotic stewardship policies in place. The situation is worse at for-profit agencies, which dominate the current US HHC industry.

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Infection Prevention and Control Practices Implemented for Congenital Measles in an Extremely Low Birth Weight Infant

Lisa Saiman, Columbia University; Erin Hanft, New York-Presbyterian Hospital; Sandhya Brachio, Columbia University Irving Medical Center; Maria Messina, New York-Presbyterian Hospital; Philip Zachariah, Columbia University Medical Center; Dena Goffman, New York-Presbyterian Hospital, Columbia University Irving Medical Center; Janett Pike, New York-Presbyterian Hospital; Lesley Covington, New York-Presbyterian Hospital; Krishika A Graham MD MPH, NYC Department of Health and Mental Hygiene; Eleanor Adams; Nina Ahmad, New York State Department of Health; Elizabeth Rausch-Phung, New York State Department of Health; Karen Southwick; Patrick Bryant, Wadsworth Center, NYS Department of Health; Anagha Khandekar, Wadsworth Center, NYS Department of Health; Karen Kulas, Wadsworth Center, NYS Department of Health

Background: Measles can cause miscarriages and preterm birth in nonimmune pregnant women. During the 2018–2019 measles outbreak in New York, a woman with measles delivered an extremely low birth weight preterm infant at our Women and Children's Hospital. We describe our measles preparedness strategies and infection prevention and control (IPC) management relevant to congenital measles. **Methods:** Because of the measles outbreak, in Q4 2018, IPC verified measles immunity in all obstetric and pediatric staff, per state regulations, and recommended determining the measles immune status of all pregnant women. To prevent measles exposure, visitor restrictions for the neonatal intensive care unit (NICU) were implemented (May 2019); only 3 visitors were permitted for each infant, including parents. All visitors had to provide written documentation of immunity to measles, regardless of epidemiologic risk factors or receive an MMR vaccine prior to visiting. New York state and New York City health departments performed measles diagnostic testing for maternal and infant specimens. **Results:** Our hospital was informed of the imminent transfer of a woman in preterm labor with suspected measles. To avoid any exposure, the mother was masked in the ambulance bay and taken by commandeered elevator to the obstetrical operating room suite, which was cleared of other patients. She delivered by C-section and was transferred to an airborne infection isolation (AII) room. The 25-week-gestation infant was transported by isolette to the NICU and was placed on AII. Testing confirmed measles in the mother (measles PCR- and IgM-positive) and congenital measles in the infant (Table 1). The mother was allowed to visit the NICU when her respiratory symptoms and rash resolved, as confirmed by her provider, ~10 days after discharge. The infant never developed a rash, pneumonia, or neurologic findings. AII was discontinued on day of life 61 in consultation with the health departments. The infant was discharged at ~36 weeks gestation. No secondary cases of measles occurred among patients, visitors, or

Table 1. Measles Diagnostic Testing in Infant with Congenital Measles

Day of life	Serum IgM	OP/NP PCR	NP/OP Culture	Urine PCR	Urine Culture	Placenta Culture
0	Positive	Positive	Positive	Positive	Positive	Positive
36	NA	NA	NA	Positive	Negative	NA
46	Negative	Negative	NA	NA	NA	NA
60	NA	Negative	NA	Negative	NA	NA

OP = oropharyngeal, NP = nasopharyngeal, NA = not available

staff. **Conclusions:** We safely cared for an extremely preterm infant with congenital measles. Laboratory testing suggested prolonged presence of measles virus, but it is unknown how long an infant in the NICU should remain on AII. The current Council of State and Territorial Epidemiologists case definition for measles requires the presence of rash. This case provides support to revise this case definition if laboratory findings are consistent with congenital measles.

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Influenza With an Infiltrate: Investigating the New Community-Acquired Pneumonia Guidelines

Amanda Barner, Cambridge Health Alliance; Lou Ann Bruno-Murtha, Cambridge Health Alliance

Background: The Infectious Diseases Society of America released updated community-acquired pneumonia (CAP) guidelines in October 2019. One of the recommendations, with a low quality of supporting evidence, is the standard administration of antibiotics in adult patients with influenza and radiographic evidence of pneumonia. Procalcitonin (PCT) is not endorsed as a strategy to withhold antibiotic therapy, but it could be used to de-escalate appropriate patients after 48–72 hours. Radiographic findings are not indicative of the etiology of pneumonia. Prescribing antibiotics for all influenza-positive patients with an infiltrate has significant implications for stewardship. Therefore, we reviewed hospitalized, influenza-positive patients at our institution during the 2018–2019 season, and we sought to assess the impact of an abnormal chest x-ray (CXR) and PCT on antibiotic prescribing and outcomes. **Methods:** We conducted a retrospective chart review of all influenza-positive admissions at 2 urban, community-based, teaching hospitals. Demographic data, vaccination status, PCT levels, CXR findings, and treatment regimens were reviewed. The primary outcome was the difference in receipt of antibiotics between patients with a negative (<0.25 ng/mL) and positive PCT. Secondary outcomes included the impact of CXR result on antibiotic prescribing, duration, 30-day readmission, and 90-day mortality. **Results:** We reviewed the medical records of 117 patients; 43 (36.7%) received antibiotics. The vaccination rate was 36.7%. Also, 11% of patients required intensive care unit (ICU) admission and 84% received antibiotics. Moreover, 109 patients had a CXR: 61 (55.9%) were negative, 29 (26.6%) indeterminate, and 19 (17.4%) positive per radiologist interpretation. Patients with a positive PCT (OR, 12.7; 95% CI, 3.43–60.98; $P < .0007$) and an abnormal CXR (OR, 7.4; 95% CI, 2.9–20.1; $P = .000003$) were more likely to receive antibiotics. There was no significant difference in 30-day readmission (11.6% vs 13.5%; OR, 0.89; 95% CI, 0.21–3.08; $P = 1$) and 90-day mortality (11.6% vs 5.4%; OR, 2.37; 95% CI, 0.48–12.75; $P = .28$) between those that received antibiotics and those that did not, respectively. Furthermore, 30 patients (62.5%) with an abnormal CXR received antibiotics and 21 (43.7%) had negative PCT. There was no difference in 30-day readmission or 90-day mortality between those that did and did not receive antibiotics. **Conclusions:** Utilization of PCT allowed selective prescribing of antibiotics without impacting readmission or mortality. Antibiotics should be initiated for critically ill patients and based on clinical judgement, rather than for all influenza-positive patients with CXR abnormalities.

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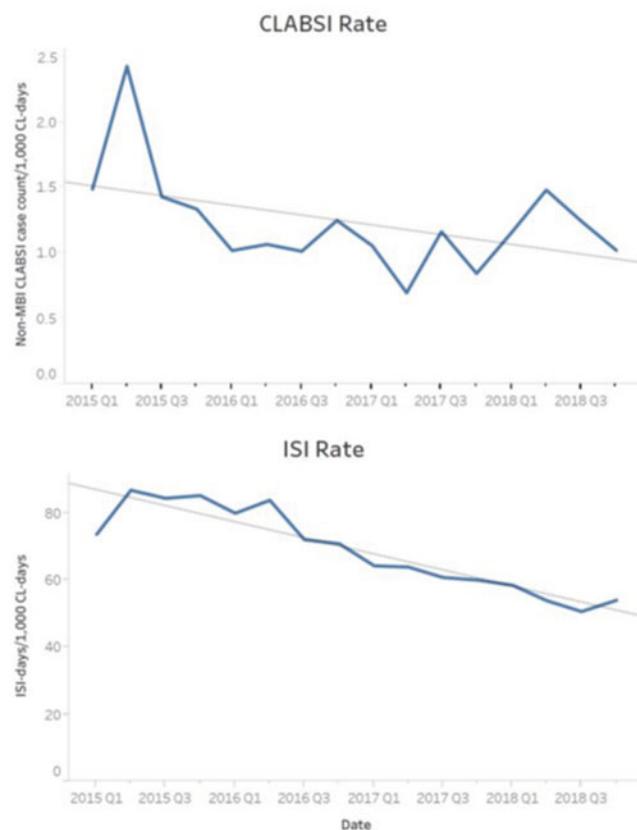
Poster Presentation

Insertion Site Inflammation Is Associated with Central-Line-Associated Bloodstream Infection

Jorge Salinas, University of Iowa; Gosia Clore, University of Iowa; Mary Kukla, University of Iowa Healthcare; Mohammed AlZunitan, University of Iowa Health Care; Jeffrey Kritzman; Oluchi Abosi, University of Iowa Hospitals & Clinics; Mireia -Puig-Asensio, University of Iowa Hospitals & Clinics; Alexandre Marra, University of Iowa Hospital and Clinics; Beth Hanna; Daniel Diekema, University of Iowa Carver College of Medicine; Michael Edmond, University of Iowa Hospitals and Clinics

Background: Central lines (CL) are widely used in the inpatient setting and central-line-associated bloodstream infection (CLABSI) is a serious complication of CL use. Because CL insertion site inflammation (ISI) may precede the onset of CLABSI, we aimed to define ISI, to determine whether ISI was associated with CLABSI, and to develop an automated surveillance system for ISI. **Methods:** We extracted electronic medical records (EMRs) of adult patients hospitalized at the University of Iowa Hospitals & Clinics during January 2015–December 2018. Nurses routinely document

CLABSI and ISI incidence at a Tertiary Care Center, 2015–2018



Abbreviations: CLABSI: Central line-associated bloodstream infection; SI: Insertion site inflammation; MBI: Mucosal barrier injury; CL: Central line.

Fig. 1.