MDROs among 38 regional facilities (18 nursing homes, 3 long-term acute-care hospitals, and 17 hospitals). Decolonization in participating nursing homes involved routine chlorhexidine bathing plus nasal iodophor (Monday through Friday, twice daily every other week) from April 2017 through July 2019. MDRO point-prevalence assessments involving all residents at 16 nursing homes conducted at the end of the intervention period were used to determine whether having a roommate was associated with MDRO carriage. Nares, bilateral axilla/groin, and perirectal swabs were processed for methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococcus (VRE), extended-spectrum β-lactamase (ESBL)–producing *Enterobacteriaceae*, and carbapenem-resistant *Enterobacteriaceae* (CRE). Generalized linear mixed models assessed the impact of maximum room occupancy on MDRO prevalence when clustering by room and hallway, and adjusting for the following factors: nursing home facility, age, gender, length-of-stay at time of swabbing, bedbound status, known MDRO history, and presence of urinary or gastrointestinal devices. CRE models were not run due to low counts. **Results:** During the intervention phase, 1,451 residents were sampled across 16 nursing homes. Overall MDRO prevalence was 49%. In multivariable models, we detected a significant increasing association of maximum room occupants and MDRO carriage for MRSA but not other MDROs. For MRSA, the adjusted odds ratios for quadruple-, triple-, and double-occupancy rooms were 3.5, 3.6, and 2.8, respectively, compared to residents in single rooms ($P = .013$). For VRE, these adjusted odds ratios were 0.3, 0.3, and 0.4, respectively, compared to residents in single rooms ($P =$ NS). For ESBL, the adjusted odds ratios were 0.9, 1.1, and 1.5, respectively, compared to residents in single rooms ($P =$ nonsignificant). **Conclusions:** Nursing home residents in shared rooms were more likely to harbor MRSA, suggesting MRSA transmission between roommates. Although decolonization was previously shown to reduce MDRO prevalence by 22% in SHIELD nursing homes, this strategy did not appear to prevent all MRSA transmission between roommates. Additional efforts involving high adherence hand hygiene, environmental cleaning, and judicious use of contact precautions are likely needed to reduce transmission between roommates in nursing homes.

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Disclosures: Gabrielle M. Gussin, Stryker (Sage Products): Conducting studies in which contributed antiseptic product is provided to participating hospitals and nursing homes. Clorox: Conducting studies in which contributed antiseptic product is provided to participating hospitals and nursing homes. Medline: Conducting studies in which contributed antiseptic product is provided to participating hospitals and nursing homes. Xttrium: Conducting studies in which contributed antiseptic product is provided to participating hospitals and nursing homes.

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Presentation Type:
Top Rated Posters

Incidence and Characteristics of Nosocomial Influenza at an Academic Medical Center

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Background: Despite introduction of mandatory vaccination of healthcare workers (HCWs) in 2011, we continued to see occasional cases of nosocomial influenza. We sought to understand the characteristics of patients who acquired nosocomial influenza to better target prevention efforts. **Methods:** The study population was a retrospective cohort of all patients aged ≥18 years admitted to an academic medical center between September 2012 and August 2018. Patient data obtained included age, admission/discharge date, service line, influenza vaccination status on admission, and virus serotype. Nosocomial influenza was defined as positive polymerase chain reaction (PCR) or antigen testing for influenza A/B >3 days after admission. Each influenza season, patients with nosocomial influenza or community-acquired influenza (CA-I) were censored after the positive test. Means with standard deviations are reported (SAS version 9.4). **Results:** Overall, 223,005 patient admissions occurred during the study period: 222,154 (99.6%) were without confirmed influenza infection, 788 (0.35%) had CA-I, and 63 (0.03%) had nosocomial influenza (Fig. 1). The mean age of patients without influenza infection was 57.6 ± 19.3 years compared to 66.5 ± 18.8 years for those with CA-I and 67.1 ± 13.5 with nosocomial influenza. Influenza A accounted for 630 cases (80%) of CA-I, and 58 cases (92%) of nosocomial influenza. Also, 31 (48%) with nosocomial influenza had been vaccinated against influenza prior to admission (Table 1). Most nosocomial influenza cases (78%) occurred on medicine and oncology units. **Conclusions:** Influenza A represented a larger percentage of nosocomial influenza compared to CA-I. The proportion of nosocomial influenza cases remained stable during

Table 1: Annual Incidence and Characteristics of Nosocomial Influenza Cases

	Total Admitted Influenza Cases in Season	Nosocomial Influenza Cases N (% of Total Admitted Cases)	Influenza A N (% of NI)	Influenza B N (% of NI)	Patients Vaccinated N (% of NI)
2012-2013	128	8 (6)	8 (100)	0 (0)	3 (38)
2013-2014	90	2 (2)	2 (100)	0 (0)	1 (50)
2014-2015	198	15 (8)	14 (93)	1 (7)	5 (33)
2015-2016	107	7 (7)	7 (100)	0 (0)	5 (71)
2016-2017	165	12 (7)	12 (100)	0 (0)	6 (50)
2017-2018	163	19 (12)	15 (79)	4 (21)	11 (58)
Total	851	63 (7)	58 (92)	5 (8)	31 (48)

NI=Nosocomial influenza

Fig. 1.

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Figure 1: Annual Distribution of Nosocomial and Community-acquired Influenza

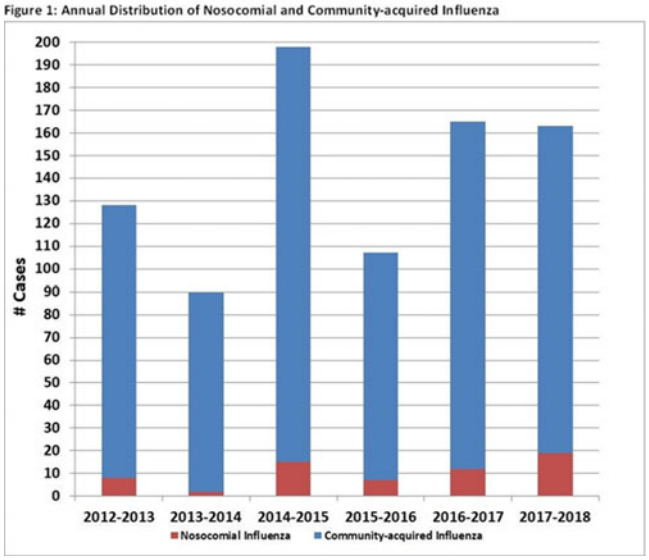

Fig. 1.

the study period, even after introduction of PCR tests in the 2014–2015 season. The mean age of the nosocomial influenza group was greater compared to the CA-I and no influenza groups. More than half of nosocomial influenza cases were unvaccinated at the time of admission, demonstrating the importance of improving vaccine uptake among vulnerable populations.

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Presentation Type:
Top Rated Posters

Incidence Trends of Central-Line–Associated Bloodstream Infections in Neonatal Intensive Care Units, NHSN, 2009–2018

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Background: Central-line–associated bloodstream infections (CLABSIs) are a major source of healthcare-associated infections (HAIs) in neonatal intensive care unit (NICU) patients, and they are associated with increased morbidity, mortality, and costs. CLABSI surveillance has been a critical component for hospitals participating in the Center for Disease Control and Prevention's National Healthcare Safety Network (NHSN) for many years. CLABSI reporting grew substantially as a result of state reporting mandates first introduced in 2005 and federal reporting requirements for all intensive care units that began in 2011. However, no recent assessment of NHSN CLABSI incidence rate changes have been performed. The objective of this analysis was to estimate the overall trends in annual CLABSI incidence rates in NICUs from 2009 to 2018. **Methods:** We analyzed NHSN CLABSI data reported from NICUs during 2009–2018. CLABSIs further classified as mucosal barrier injury were included in this analysis. To evaluate the trends of CLABSI incidence (per 1,000 central-line days), and to account for the potential impact of definition changes introduced in 2015, we conducted an interrupted time-series analysis using mixed-effects negative binomial regression modeling. Birth weight category, patient care location type and hospital-level characteristics such as hospital type, medical affiliation, teaching status, bed size, and average length of inpatient stay) were assessed as potential covariates in regression analysis. Random intercept and slope models were evaluated with covariance tests and used to account for differential baseline incidence and trends among reporting NICUs. **Results:** The number of NICUs reporting to NHSN increased significantly following the federal mandate and has remained slightly >1,000 NICUs since 2013. The crude incidence of CLABSI dropped from 2.24 in 2009 to 0.98 infections per 1,000 central-line days in 2018, except for an increase in 2015 (Table 1). The CLABSI incidence, adjusted for birth weight category, decreased by an average of 11.6% per year from 2009 to 2018 except for a 35.8% increase in 2015 (Table 2). **Conclusion:** These findings suggest that hospitals have made significant strides in reducing the occurrence of CLABSIs in NICUs over the last 10 years. The increase in 2015 could be explained in part by the implementation and application of new definitional changes. Continued practices and policies that target, assess and prevent CLABSI in this setting may have been effective and remain vital to sustaining this decline nationally in subsequent years.

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Table 1: Crude CLABSI incidence rates/1,000 central line days from NICUs, 2009-2018

Year	*No. of hospitals*	*No. of events*	*No. of central line days*	*CLABSI RATE*
2009	354	1,485	664,048	2.236
2010	530	1,380	844,652	1.634
2011	964	2,189	1,462,819	1.496
2012	999	1,860	1,423,481	1.307
2013	1,018	1,638	1,412,865	1.159
2014	1,013	1,537	1,427,678	1.077
2015	1,044	1,936	1,436,849	1.347
2016	1,051	1,600	1,415,628	1.130
2017	1,060	1,490	1,390,368	1.072
2018	1,063	1,292	1,314,420	0.983

Fig. 1.

Table 2: Summary of model coefficients, incidence rate ratios and annual percentage change for CLABSIs in NICUs, 2009-2018.

Effect of generalized linear mixed model[a]	Estimate	Standard Error	p-value	Incidence rate ratio (95% CI)	Percent change per year[b] (95%CI)
Time Trend	-0.1161	0.007567	<.0001	0.890 (0.877,0.904)	-11.61 (-12.28, -09.63)
Immediate effect of interruption at 2015	0.3575	0.03445	<.0001	1.430 (1.34,1.53)	35.75 (33.69, 53.02)

[a]Negative binomial model adjusted for birth weight category only. Other potential covariates were not significant and dropped from the final model. [b]Percent change = (incidence rate ratio-1) x 100

Fig. 2.

Presentation Type:
Top Rated Posters

National Reporting Trend for HO-MRSA Bacteremia LabID Events, 2010–2018

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