

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

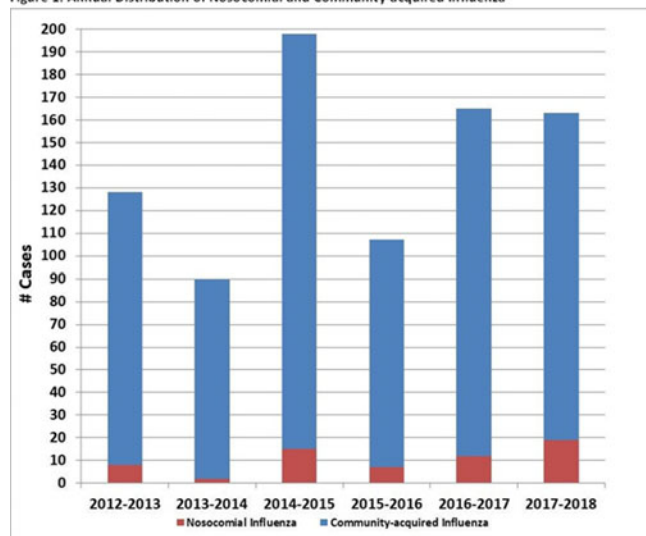


Fig. 1.

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

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 <sup>a</sup> | Estimate | Standard Error | p-value | Incidence rate ratio (95% CI) | Percent change per year <sup>b</sup> (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)                         |

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

Fig. 2.

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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Top Rated Posters

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

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