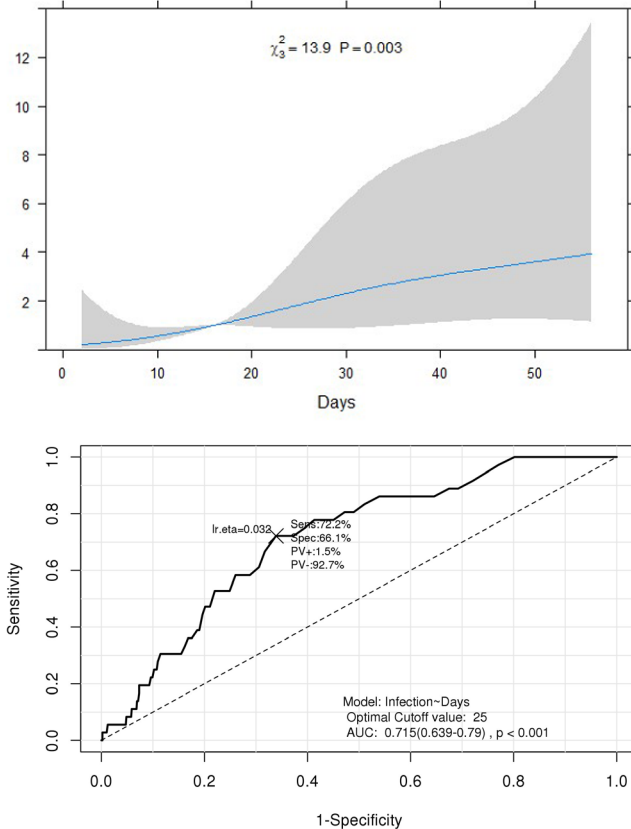


Safety Network. CLABSI caused by PICC was defined as PICC-associated bloodstream infection (PABSI). For identifying the statistical correlation between catheter-days and PABSI, odd ratio for PABSI according to the continuous value of catheter-days was analyzed using restricted cubic spline splits with five knots. Receiver operating characteristic (ROC) curve was used to determine the diagnostic precision of applying catheter-days for PABSI. The optimal cut-off value of catheter-days was identified by maximizing the area under ROC curve (AUC).

Results. A total of 1,053 patients underwent ultrasound-guided PICC insertion during the study period. Of them, 36 cases were confirmed as PABSI (3.5%, 36/1,014; 1.14 per 1,000 catheter days). In the restricted cubic spline regression, catheter maintenance days showed a dose-dependent relationship with the risk of PABSI. The ROC for developing PABSI according to catheter maintenance duration showed that the AUC was 0.715 (95% CI 0.639–0.790) and the optimal cut-off value was 25 days.

Conclusion. The incidence of PABSI was 1.14 per 1,000 catheter days and the optimal cut-off value of catheter-days for preventing PABSI was 25 days.



Disclosures. All authors: No reported disclosures.

1173. Expanding the MAGIC: Engagement of Frontline Nursing Staff in Device Stewardship

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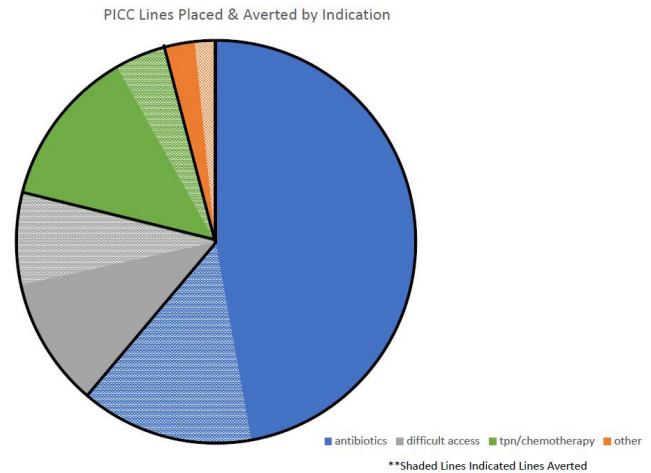
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Background. Nearly 40% of all peripherally inserted central catheter (PICC) placements may be inappropriate. Validated appropriateness criteria (Michigan Appropriateness Guide for Intravenous Catheters or MAGIC) were developed to improve patient safety and decrease adverse events from PICC line use. Recent studies have demonstrated the impact of MAGIC implementation with success but involve multimodal interventions that may not be sustainable. We evaluated the effect of a nursing-driven MAGIC-derived triage tool on online utilization.

Methods. We conducted a quasi-experimental before and after study evaluating the effect of a MAGIC-derived triage tool including all patients for whom a PICC consult was ordered. The triage tool was implemented January 1, 2018 as part of the consult order and required providers to identify an indication for placement. All consults were reviewed by the IV Team Nurses who collaborated with ID providers when warranted. Providers were contacted if MAGIC criteria suggested alternate access was more appropriate and encouraged to either place a mid or peripheral line or to consider an oral medication. Rates of line utilization and line infections pre-intervention and post-intervention were compared.

Results. Overall, 242 consults for PICC lines were placed during the one year intervention period January 1, 2018 to December 31, 2018. Indications included: antibiotics (54%), TPN/chemo (21%) difficult access (17%), no response (8%). Thirty-five PICCs were averted directly related to the intervention. Appropriate indication of PICC placement with the tool was 88%. During this same time period, the line utilization ratio (lines/1,000 patient-days of care) decreased from a mean of 3.8 (range 3.3 to 4.2 for years 2015–2017) to 2.6, a 32% reduction (IIR 0.72; $P < 0.05$). Central line bloodstream infection rates (infections/1,000 line days of care) also decreased from a mean of 0.81 (range 0.56 to 1.18 for years 2015–2017) to 0.37, a 54% reduction (IIR 0.4; $P = 0.10$).

Conclusion. Even in a setting of low line infection and line utilization rates, further reductions in potential device harm can be achieved using point of care feedback tools. This intervention empowers nursing involvement in device stewardship, thus expanding the range of their involvement in stewardship activities.



Disclosures. All authors: No reported disclosures.

1174. The Impact of Multidisciplinary Central Line Stewardship Program to Decrease CLABSI Rates and Central Line Utilization Rates in an Academic Urban Medical Center

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Background. Central Line-Associated Blood Stream Infections (CLABSI) is a major healthcare dilemma, contributing to increased morbidity, mortality, and costs. We sought to reduce rates of CLABSI and device utilization by implementing a multidisciplinary Central Line Stewardship Program (CLSP).

Methods. In July 2017, the CLSP, multidisciplinary quality improvement project, was implemented at an academic medical center to ensure proper indication for all CVCs in the hospital and removal when no longer indicated. A CLSP team of executive leaders and infection preventionists performed daily rounds on all CVCs to review indications and maintenance. Nursing staff reported all CVCs daily. Information Technology modified the electronic health record to require daily physician documentation of CVC placement and indications, and to suggest alternatives to CVC when possible. In the event of a CLABSI, a root cause analysis was conducted within 72 hours, and feedback was shared with the clinical staff. A retrospective review was conducted 18 months before and after CLSP implementation. As a facility in a state with mandatory reporting of hospital-acquired infections, institutional data were readily available through the National Healthcare Safety Network (NHSN). To compare rates of CLABSI and device utilization pre- and post-CLSP, we reviewed the Incidence Density Rate (IDR), the standardized infection ratio (SIR), and standardized utilization ratio (SUR). Data from the NHSN website were analyzed using statistical tools provided by the NHSN analysis module. Two-tailed significance tests were conducted with a set α of 0.05.

Results. Post-CLSP, there was a statistically significant decrease in SIR from 1.99 to 0.885, with risk reduction by 44.3% ($P = 0.013$, 95% CI 0.226–0.831). CLABSI IDR per 1000 CVC days declined from 1.84 to 0.886 ($P = 0.0213$). CVC utilization per 1000 patient-days reduced from 155.08 to 142.35 ($P < 0.001$). There was also a trend toward fewer PICC line infections post-intervention (17 to 5).

Conclusion. With this novel CLSP, we achieved a significant reduction in rates of CLABSI and device utilization, suggesting that a multidisciplinary approach can promote sustainable prevention of line-associated infections through dedicated surveillance of CVC indications and maintenance.