

Abstract:

Background: An academic safety-net hospital leveraged the federally funded state Delivery System Reform Incentive Payment programme to implement a hospital-wide initiative to reduce healthcare-associated infections (HAIs) and improve sepsis care.

Methods: The study period was from 2013 to 2017. The setting is a 770-bed urban hospital with six intensive care units and a large emergency department. Key interventions implemented were (1) awareness campaign and clinician engagement, (2) implementation of HAI and sepsis bundles, (3) education of clinical personnel using standardised curriculum on bundles, (4) training of key managers, leaders and personnel in quality improvement methods, and (5) electronic medical record-based clinical decision support. Throughout the 5-year period, staff received frequent, clear, visible and consistent messages from leadership regarding the importance of their participation in this initiative, performing hand hygiene and preventing potential regulatory failures. Several process measures including bundle compliance, hand hygiene and culture of safety were monitored. The primary outcomes were rates of central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), surgical site infection (SSI) and sepsis mortality.

Results: From 2013 to 2017, the hospital-wide rates of HAI reduced: CLABSI from 1.6 to 0.8 per 1000 catheter-days (Poisson regression estimate: -0.19; 95% CI -0.29 to -0.09; $p=0.0002$), CAUTI from 4.7 to 1.3 per 1000 catheter-days (-0.34; -0.43 to -0.26; $p<0.0001$) and SSI after 18 types of procedures from 3.4% to 1.3% (-0.29; -0.34 to -0.24; $p<0.0001$). Mortality of patients presenting to emergency department with sepsis reduced from 9.4% to 2.9% (-0.42; -0.49 to -0.36; $p<0.0001$). Adherence to bundles of care and hand hygiene and the hospital culture of patient safety improved. Results were sustained through 2019.

Reference:

Sreeramoju P, Voy-Hatter K, White C, Ruggiero R, Girod C, Minei J, Garvey K, Herrington J, Minhajuddin A, Madden C, Haley R, Cerise F. Results and lessons from a hospital-wide initiative incentivised by delivery system reform to improve infection prevention and sepsis care. *BMJ Open Qual.* 2021 Feb;10(1):e001189. doi: 10.1136/bmjopen-2020-001189. PMID: 33547154.

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