

middle-income countries, the incidence of SSIs ranged from 1.2 to 23.6 per 100 surgical procedures. This contrasted with rates between 1.2% and 5.2% in high-income countries. **Objectives:** We aimed to leverage the existing surveillance capacities at our tertiary-care hospital to estimate the incidence of SSIs in a cohort of trauma patients and to develop and validate an indigenously developed, electronic SSI surveillance system. **Methods:** A prospective cohort study was conducted at a 248-bed apex trauma center for 18 months. This project was a part of an ongoing multi-center study. The demographic details were recorded, and all the patients who underwent surgery ($n = 770$) were followed up until 90 days after discharge. The associations of occurrence of SSI and various clinico-microbiological variables were studied. **Results:** In total, 32 (4.2%) patients developed SSI. *S. aureus* (28.6%) were the predominant pathogen causing SSI, followed by *E. coli* (14.3%) and *K. pneumoniae* (14.3%). Among the patients who had SSI, higher SSI rates were associated in patients who were referred from other facilities ($P = .03$), had wound class-CC ($P < .001$), were on HBOT ($P = .001$), were not administered surgical antibiotics ($P = .04$), were not given antimicrobial coated sutures ($P = .03$) or advanced dressings ($P = .02$), had a resurgery ($P < .001$), had a higher duration of stay in hospital from admission to discharge ($P = .002$), as well as from procedure to discharge ($P = .002$). SSI was cured in only 16 patients (50%) by 90 days. SSI data collection, validation, and analyses are essential in developing countries like India. Thus, it is very crucial to implement a surveillance system and a system for reporting SSI rates to surgeons and conduct a robust post-discharge surveillance using trained and committed personnel to generate, apply, and report accurate SSI data.

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Surveillance and Control Efforts for Carbapenemase-Producing Gram-Negatives at a High Burden Vietnam University Hospital

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Background: Carbapenem-resistant gram-negative bacteria are an urgent threat to healthcare safety around the world. In Vietnam, Although surveillance and control of multidrug-resistant organisms is a national priority, information on the burden of these resistant pathogens is still scarce. At University Medical Center Ho Chi Minh City, Vietnam, we aimed to better understand carbapenem-resistance

through 2 phases: (1) assess proportion of carbapenem-resistant gram-negative organisms that are carbapenemase-producing (CP-CRO) and (2) assess transmission burden of carbapenemase-producing carbapenem-resistant Enterobacteriaceae (CP-CRE) in the general intensive care unit (ICU). **Methods:** In the first phase, all gram-negative clinical isolates collected between November 2018 and April 2019 were tested for carbapenem-resistance using the disc-diffusion method and were defined as meropenem resistant using the Clinical and Laboratory Standards Institute 2018 break point (*M100-Performance Standards for Antimicrobial Susceptibility Testing, 28th Edition*). Carbapenem-resistant bacteria were tested for phenotypic carbapenemase-production using the Becton Dickinson Phoenix CPO Detect assay. In the second phase, we instituted CP-CRE rectal screening using CHROMagar mSuperCARBA media for all ICU patients from July through September 2019. Patients were screened on admission, and negative patients were rescreened every 2 days until discharge, death, or CRE-positive screening or culture. Admission prevalence and incidence of CP-CRE transmission was calculated among CP-CRE infected or colonized patients. **Results:** From November 2018 through April 2019, 599 gram-negative clinical isolates from 543 patient samples were identified. Of these, 108 were carbapenem-resistant; 107 (99%) of carbapenem-resistant isolates were carbapenemase-producing by phenotypic method. Most CP-CRO were *Acinetobacter baumannii* (45 of 107, 42%) or *Klebsiella pneumoniae* (39 of 107, 36%). During ICU CP-CRE colonization screening, the July positivity rate on admission was 40% (32 of 81), the August positivity rate on admission was 30% (21 of 71), and the September positivity rate on admission was 40% (30 of 75). Of those with negative admission screen, the proportion of new CP-CRE colonization in July was 45% (22 of 49), the proportion of new CP-CRE colonization in August was 64% (32 of 50), and the proportion of new CP-CRE colonization in September was 44% (20 of 45). Across all 3 months of screening, the proportions of CP-CRE that were *Klebsiella*, *Citrobacter*, or *Enterobacter* were 68% (118 of 174) and the proportion of CP-CRE that were *Escherichia coli* was 37% (56 of 174). The average number of days to turn from negative to positive screening result was 4.1. **Conclusions:** Our analysis demonstrates that nearly all carbapenem-resistant organisms at our hospital are carbapenemase producing. In the ICU, we identified a high burden of CP-CRE, attributable to high presence on admission and new acquisition in the ICU. An intervention package based on CDC-recommended enhanced infection control measures is being implemented to decrease CP-CRE transmission in the ICU.

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Surveillance of Healthcare-Associated Bloodstream and Urinary Tract Infections in a National Level Network of Indian Hospitals

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Background: Healthcare-associated infections (HAIs) are a major global threat to patient safety. Systematic surveillance is crucial for understanding HAI rates and antimicrobial resistance trends and to guide infection prevention and control (IPC) activities based on local epidemiology. In India, no standardized national HAI surveillance system was in place before 2017. **Methods:** Public and private hospitals from across 21 states in India were recruited to participate in an HAI surveillance network. Baseline assessments followed by trainings ensured that basic microbiology and IPC implementation capacity existed at all sites. Standardized surveillance protocols for central-line-associated bloodstream infections (CLABSIs) and

catheter-associated urinary tract infections (CAUTIs) were modified from the NHSN for the Indian context. IPC nurses were trained to implement surveillance protocols. Data were reported through a locally developed web portal. Standardized external data quality checks were performed to assure data quality. **Results:** Between May 2017 and April 2019, 109 ICUs from 37 hospitals (29 public and 8 private) enrolled in the network, of which 33 were teaching hospitals with >500 beds. The network recorded 679,109 patient days, 212,081 central-line days, and 387,092 urinary catheter days. Overall, 4,301 bloodstream infection (BSI) events and 1,402 urinary tract infection (UTI) events were reported. The network CLABSI rate was 9.4 per 1,000 central-line days and the CAUTI rate was 3.4 per 1,000 catheter days. The central-line utilization ratio was 0.31 and the urinary catheter utilization ratio was 0.57. Moreover, 3,542 (73%) of 4,742 pathogens reported from BSIs and 868 (53%) of 1,644 pathogens reported from UTIs were gram negative. Also, 1,680 (26.3%) of all 6,386 pathogens reported were Enterobacteriaceae. Of 1,486 Enterobacteriaceae with complete antibiotic susceptibility testing data reported, 832 (57%) were carbapenem resistant. Of 951 Enterobacteriaceae subjected to colistin broth microdilution testing, 62 (7%) were colistin resistant. The surveillance platform identified 2 separate hospital-level HAI outbreaks; one caused by colistin-resistant *K. pneumoniae* and another due to *Burkholderia cepacia*. Phased expansion of surveillance to additional hospitals continues. **Conclusions:** HAI surveillance was successfully implemented across a national network of diverse hospitals using modified NHSN protocols. Surveillance data are being used to understand HAI burden and trends at the facility and national levels, to inform public policy, and to direct efforts to implement effective hospital IPC activities. This network approach to HAI surveillance may provide lessons to other countries or contexts with limited surveillance capacity.

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Surveillance of ICU Patients for *Candida auris* in a Suburban Chicago Hospital System: Results of a Limited Trial

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Background: *Candida auris* prevalence in Illinois, particularly in the metropolitan Chicago area, is high. The Illinois Department of Public Health recommends empiric contact precautions for patients with a tracheostomy or requiring mechanical ventilation from skilled nursing facilities (vSNFs) or long-term acute-care hospitals (LTACHs) who are admitted to an acute-care hospital. Cases of *C. auris* infection and colonization are reportable to the Illinois Extensively Drug Resistant Organism Registry (XDRO Registry). NorthShore University HealthSystem (NSUHS) actively screens adult intensive care unit (ICU) admissions from LTACHs and vSNFs for *CA*. **Methods:** NSUHS is a 4-hospital system located north of Chicago with 750 beds, 4 ICUs and ~64,000 annual admissions. Beginning in April 2019, a composite axilla-groin swab was collected from