

used for distribution. As a crude estimate, our response rate was 20% (86/440); however, this could not be confirmed. Second, facilities with an ASP may be more likely to respond, leading to selection bias.

Antimicrobials are commonly prescribed in LTCF. The extensive use of antimicrobials results in the risk of not only adverse drug reactions, but also the promotion of antimicrobial resistance and *C. difficile* infection. Antimicrobial stewardship is relatively uncommon in surveyed LTCF across Michigan. Education and training pertaining to antimicrobial stewardship are sorely needed for LTCF. Development of ASPs tailored to the needs and resources of LTCFs will be essential to prevent further emergence of antimicrobial resistance across the continuum of care.

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Surveillance Systems for Nosocomial Infections: Methods and Challenges

To the Editor—Nosocomial infections (NIs), also known as healthcare-associated infections and hospital-acquired infections, with a pooled prevalence of 10.1%, are considered to be serious public health problems around the world.¹ The NI-related burden is unknown because of lack reliable data, lack of surveillance systems and the complexity of corresponding NI outcomes.²

Healthcare systems use different approaches to monitoring NIs.^{3–7} Generally, surveillance methods are categorized under the umbrellas of active, passive, and sentinel surveillance methods.⁸ At present, hospitals implement passive surveillance approaches because of feasibility and low cost. However, the quality of this methodology is in question; underreporting and lack of timeliness are the main challenges. In contrast to the passive approach of NI surveillance systems, active ones do not face the challenge of real-time detection of hospital-acquired infection and provide high-quality data on the trends and burdens of NIs. This approach requires extensive resources.

Lessons learned from the implementation of passive approaches to NI surveillance, especially in low- and middle-income countries, have revealed the necessity of applying other methods. Implementation of integrated sentinel surveillance methods using active approaches at selected hospitals and healthcare facilities provides reliable data about the epidemiological profiles of hospital-acquired infections with limited resources. Selecting representative hospitals can contribute to an appropriate understanding of NI-related burden.

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Identifying Patients at High Risk for Carbapenem-Resistant *Enterobacteriaceae* at Admission: Nurse-Led or Doctor-Led?

To the Editor—Carbapenem-resistant *Enterobacteriaceae* (CRE), especially carbapenemase-producing (CP) CRE, has

become a major public health concern, mostly due to its high level of transmission potential. Additionally, mortality associated with CRE infections is reported to be between 40% and 50%.¹ At Tan Tock Seng Hospital (TTSH), a 1,500-bed teaching hospital in Singapore, we have been practicing a mixture of proactive infection control strategies (eg, screening patients with travel history to CRE endemic countries) and reactive infection control strategies (eg, contact tracing once CRE is identified from clinical cultures) since 2010.² However, these activities have not stemmed the rising trend of CP-CREs, particularly the New Delhi metallo- β -lactamase (NDM-1)–producing *Enterobacteriaceae*. The situation became more pressing in 2013 when a large tertiary care hospital in Singapore witnessed a significant increase in *Klebsiella pneumoniae* carbapenemase (KPC)–producing *Enterobacteriaceae*.³ In July 2013, we started screening high-risk patients for CREs (patients with hospitalization in healthcare facilities other than TTSH during the preceding 1 year) within 24 hours of admission, with the objectives of identifying endemic CP-CREs early and preventing an influx of other CP-CREs. This report details the implementation of this high-risk screening program and compares the compliance to screening of high-risk patients between doctors and nurses.

We divided the implementation period into 2 phases: phase 1 (July 2013–March 2014) and phase 2 (April 2014–December 2014). During phase 1, high-risk patients were identified by the clinicians. Doctors ordered surveillance cultures for CRE, which were collected by the nurses. This doctor-led screening strategy was presented at the hospital clinical directors meeting, with heads of departments being encouraged to regularly reiterate to their teams the importance of screening for high-risk patients. E-mail reminders were also sent to all doctors at regular intervals. In phase 2, high-risk patients were identified by nurses as part of routine admission assessment. The nurse-led screening strategy was presented at a nurse managers' meeting and was communicated to all nurses via e-mail. With the support from hospital administration, nurses were given “rights to order” for CRE surveillance cultures for high-risk patients so as not to delay collection of surveillance cultures. Identification criteria of high-risk patients were printed on an inpatient nursing assessment checklist. Both phases of implementation were fully supported by the hospital administration. On a weekly basis, the infection control unit collected both the total number of high-risk patients screened as well as the number of positive results identified. Regular feedback regarding missed high-risk patients was provided to the medical and nursing teams during phase 1 and phase 2, respectively.

For CRE surveillance, patients were screened for fecal carriage of CRE using a single rectal swab specimen or stool sample, which were plated onto chromogenic agar (chromID CARBA, bioMérieux SA, Marcy l'Étoile, France). After overnight incubation, colonies with color appearance according to the manufacturer's instruction, were considered presumptive CRE colonies. The presence of different