Electronic Detection of MRSA Infections in a National VA Population Augments Current Manual Process

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Background. Colonization with *Staphylococcus aureus* (SA) increases the risk of surgical site infection (SSI) and de-colonization reduces this risk depending on level of patient adherence. Our VA facility's participation in a multi-site study to identify the best strategies for implementing peri-operative SA de-colonization provided an opportunity to examine the reliability of existing internal processes. The objectives of this single-site study were to asses self-reported patient adherence, and barriers to recommended de-colonization procedures, as well as to examine if current patient educational materials were sufficient.

Methods. A survey measuring self-reported adherence and barriers to recommended de-colonization procedures was administered by telephone. A process map of the patient education process was employed to identify key frontline staff who were asked to review existing patient education materials and procedures. A new patient education tool was then developed with their input and input from an expert in patient education.

Results. 34 patients responded to the telephone interview. Self-reported de-colonization adherence was 100%. 32% of patients reported high levels of social/economic deprivation and only 32% reported using medication reminders, suggesting some risk of non-adherence. Process mapping revealed that patient education was delivered through a combination of face-to-face training and printed materials. Review of the printed materials identified a number of opportunities for improvement. The newly developed patient education tool was rewritten at a 7th grade reading level and revised to include: (1) more concrete information on the benefits of SA de-colonization; (2) visual aides to enhance performance of different de-colonization tasks; and (3) a tracking log to facilitate adherence to each of the recommended de-colonization tasks.

Conclusion. We identified many opportunities to improve the education of patients undergoing SA de-colonization prior to high-risk surgery at our VA. Further work will need to be done to determine whether these changes positively impacted patient adherence to recommended de-colonization procedures and whether this translates into improved patient outcomes.

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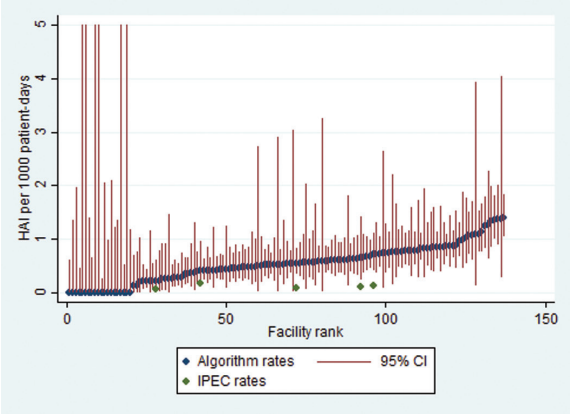
Background. Automated measurement of hospital-acquired infections (HAIs) can improve the efficiency and reliability of surveillance. Within the VA, inpatient MRSA HAIs are manually reviewed and reported to the Inpatient Evaluation Center (IPEC). These MRSA HAI metrics are used as part of facility rankings to compare quality. However, IPEC uses CDC surveillance definitions which may vary in interpretation across facilities and not reflect all clinically relevant MRSA events. Thus, we sought to compare this manual process to a previously-developed electronic algorithm for detecting clinical MRSA infections to evaluate whether the algorithm could be used to expand MRSA surveillance activities.

Methods. Electronic data were extracted from the national VA healthcare system during the period from January 1, 2014–December 31, 2014. The electronic detection algorithm defined MRSA infections as a culture positive for MRSA from a sterile site or from a non-sterile site with receipt of an antimicrobial with MRSA activity ± 5 days from the date of culture collection. Cultures obtained ≥48 hours after admission were classified as HAI.

IPEC data for five facilities was extracted and IPEC rates were compared with rates estimated by the electronic algorithm. Flagged infections at one facility were manually reviewed to evaluate any discordances.

Results. *N* = 14,260 MRSA clinical cultures were identified in 9,209 unique patients. Of these, 1,703 met definition for MRSA HAI infection.

Electronic algorithm detected MRSA HAI rates varied widely across 137 facilities (Figure 1), ranked by rate per 1,000 patient-days. IPEC rates were universally lower than estimates derived using the MRSA electronic detection tool. Discordance in the estimates was attributable to infections present on admission, differences in capture of surgical site infections, and differences between clinical and surveillance definitions of infection.



Conclusion. Applying the MRSA algorithm provided additional information about the burden of MRSA infections across the VA. This algorithm could be used as a tool to complement IPEC reporting and further inform infection prevention activities.

Disclosures. **All authors:** No reported disclosures.

2178. Developing a Checklist to Identify and Manage MRSA Outbreaks in the Neonatal ICU using a Multi-Disciplinary Approach

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Background. From 2001 to 2015, the New York State Department of Health (NYSDOH) received 241 hospital-associated infection reports from neonatal ICUs (NICUs); 72 (29%) were caused by methicillin-resistant *Staphylococcus aureus* (MRSA) and involved 390 babies at initial report. Given this MRSA burden and variability in outbreak response, a checklist was developed to help NICUs identify and manage MRSA outbreaks. NYSDOH and academic partners conducted a workshop to teach NICU multidisciplinary teams these skills.

Methods. The checklist committee were members of the NYSDOH and academic subspecialists in infectious disease, infection control and neonatology from three medical centers in NYC; all of whom had reported MRSA outbreaks within the past year. The committee met twice monthly for 6 months and developed the checklist as a practical tool for a multidisciplinary care team to implement existing guidelines. A checklist draft was distributed during the NYSDOH's one-day workshop to *Control and Prevent MRSA Outbreaks*, attended by 73 individuals from 25 NICUs in the NYC metropolitan region. Attendees provided feedback to modify the checklist.

Results. The checklist has 10 sections including guidance about developing a case definition and line list; reporting to the NYS DOH; managing census; communicating with local microbiology laboratories, interdisciplinary teams, families, and employee health service; using transmission-based precautions, obtaining surveillance cultures, cohorting infants and staff, and improving environmental cleaning. Implementation strategies are emphasized, e.g., evaluate effectiveness of environmental cleaning and disinfection practices and empower staff to observe and enforce hand hygiene compliance. Practical tips are provided, e.g., assess equipment shared with other units, review clinical cultures for patterns suggestive of acquisition route, take a non-punitive approach with MRSA-positive staff, perform environmental cultures if other strategies fail to stop transmission.

Conclusion. Checklists facilitate healthcare delivery. This is the first comprehensive checklist designed to reduce MRSA burden in NICUs. Future work will assess the impact of the checklist on reporting and outbreak size and duration.

Disclosures. **All authors:** No reported disclosures.