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Impact of elimination of contact precautions on noninfectious adverse events among MRSA and VRE patients

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To the Editor—We read with great interest the article by Martin *et al*¹ published online in May 2018 in *Infection Control and Hospital Epidemiology*.¹ We previously reported on the impact of elimination of contact precautions (CP) in methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE) patients on noninfectious complications, although our analysis was limited to falls and pressure ulcers.² Our findings differed from those of Martin *et al*; we observed no statistically significant difference in the rate of falls or pressure ulcers among MRSA/VRE patients in the years before and after eliminating CP. The rate of falls among MRSA/VRE patients in the year before eliminating CP was 4.57 per 1,000 patient days, and it was 4.82 per 1,000 patient days in the year after eliminating contact precautions ($P = .074$). Similarly, the rate of pressure ulcers in the year before eliminating CP was 4.87 per 1,000 patient days, and it was 4.17 per 1,000 patient days in the year after eliminating contact precautions ($P = .33$).

Martin *et al* report a significant drop in the number of noninfectious adverse events among MRSA/VRE patients in the year

after eliminating CP (21.4 per 1000 admissions vs 6.08 per 1000 admissions; $P < .001$). In contrast to our study, the study summarized by Martin *et al* not only included falls and pressure ulcers but also hemorrhage, postoperative respiratory failure, wound dehiscence, and pulmonary embolism or deep vein thrombosis. Although the composite index of all noninfectious adverse events showed a significant drop, the authors did not present a breakdown by individual adverse events in MRSA/VRE and non-MRSA/VRE patients.

We reported 2 additional important findings in our study. First, MRSA/VRE patients had a statistically significant higher Charlson comorbidity index (CCI) compared with non-MRSA/VRE patients (mean CCI, 3.32 vs 2.75; $P = .002$). This was not examined by Martin *et al*. Second, compared to non-MRSA/VRE patients, we found that MRSA/VRE patients had significantly higher rates of falls (4.57 per 1,000 patient days vs 2.04 per 1,000 patient days) and pressure ulcers (4.87 per 1,000 patient days vs 1.22 per 1,000 patient days), both in the year before and in the year after eliminating CP. Based on figure 2 from Martin *et al*, the rate of noninfectious adverse events were much higher in MRSA/VRE patients than in non-MRSA/VRE patients in the year prior to elimination of CP. However, in the year thereafter, there seems to be no difference.

The reason for the discrepancy in the findings between the 2 studies is unclear. However, we have identified 2 differences between

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the studies. First, the rate of individual adverse events between the MRSA/VRE and non-MRSA/VRE patients in Martin et al are not included. Second, for rate calculation, we calculated the rate per 1,000 patient days, whereas Martin et al considered the rate per 1,000 admissions. Whether this had any influence on outcomes is unknown.

Similar to the previous study by Martin et al³ that indicated no change in the healthcare associated infection (HAI) rates of MRSA/VRE after elimination of CP, we also reported no significant change in HAI rates in MRSA/VRE patients after eliminating CP in our study.² Thus, eliminating CP for MRSA/VRE patients is not associated with increased HAI rates with MRSA/VRE and could improve patient safety outcomes. Our observation that MRSA/VRE patients are at higher risk of noninfectious adverse events argues the need for serious consideration of eliminating CP among MRSA/VRE patients.

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Collaboration for containment: Detection of OXA-23–like carbapenemase-producing *Acinetobacter baumannii* in Colorado

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To the Editor—Multidrug-resistant *Acinetobacter baumannii* (MDR-AB) is an aggressive pathogen often transmitted in healthcare facilities. Critically ill patients are at highest risk, particularly those with recent surgery, prolonged ventilation, and exposure to broad spectrum antibiotics.¹ Containment of MDR-AB requires early identification and multifaceted interventions.

MDR-AB strains that are resistant to carbapenems present additional containment issues because plasmid-mediated carbapenemase production is a common resistance mechanism.² Given its importance as an emerging antimicrobial-resistant pathogen, many public health departments, including the Denver metropolitan region in Colorado, require carbapenem-resistant *Acinetobacter baumannii* (CRAB) to be reported.

Between December 2017 and February 2018, Denver Health Medical Center (DHMC) detected 2 inpatients with carbapenemase-producing CRAB isolates in urine. Prior to these cases, no previous CRAB isolates in Colorado had been characterized as carbapenemase-producing organisms. DHMC and the Colorado Department of Public Health and Environment (CDPHE) collaborated to determine epidemiologic and molecular relatedness of the

isolates, as well as to investigate healthcare infection control measures.

DHMC is a 555-bed safety net teaching hospital and level 1 trauma center located in Denver, Colorado. DHMC previously reported an MDR-AB outbreak between 2004 and 2005,³ and these MDR-AB isolates retained carbapenem susceptibility. Regionally, CRAB is unusual in the Denver metropolitan region, with 2–13 cases reported from sterile body sites and urine per year since 2013.

The CDPHE epidemiologists and DHMC infection preventionists performed surveillance for additional cases that met the case definition. CRAB isolates were defined as those that had a minimum inhibitory concentration (MIC) to at least 1 carbapenem in the intermediate or resistant range. Investigators reviewed medical records for common hospital locations, medical equipment, procedures, and staff members. Infection preventionists observed practices among shared staff members. Pulsed-field gel electrophoresis (PFGE) was performed at the CDPHE laboratory, while antimicrobial susceptibility and carbapenemase testing was performed at the Centers for Disease Control and Prevention (CDC).

The epidemiologic investigation revealed several similarities. Patient 1 was a 59-year-old male with diabetes mellitus and spina bifida, while patient 2 was a 23-year-old male with lymphangiomatosis and resulting T6 paraplegia. Both patients had neurogenic bladders managed by suprapubic catheters, stage 4 decubitus ulcers, recent surgery, and extensive antibiotic exposure. Neither had recently traveled outside of Colorado nor received a carbapenem in the prior 6 months. CRAB was detected from urine

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