

colonized patients and contaminated suction equipment. Control measures addressing these potential sources were successful in terminating the outbreak. Ongoing surveillance, hand hygiene, strict adherence to contact precautions and adequate environmental cleaning are essential elements to prevent recurrent outbreaks.

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The impact of the global war on terrorism on healthcare-associated resistant *Acinetobacter baumannii*

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ISSUE: This Army medical center has seen a marked increase in healthcare-associated resistant (r) *Acinetobacter baumannii* (Acb) acquisitions since mid-2003, due to the volume of colonized military personnel admitted from Iraq and Afghanistan. Since June 2003, there has been a large influx of patients colonized or infected with rAcb. Additionally, there have been 47 healthcare-associated (HA) acquisitions.

PROJECT: Since June 2003, prospective surveillance has been conducted on over 800 inpatient military personnel returning from Iraq and Afghanistan. Patients were placed on contact precautions on admission, pending results of surveillance cultures. HA transmission of rAcb was monitored using standard infection control methodology. All cases of patients with rAcb were placed on contact precautions when identified. A large-scale epidemiologic investigation involving cultures of environmental surfaces, providers' hands, and patients was conducted as part of a performance improvement initiative. Pulsed-field gel electrophoresis (PFGE) was conducted on a sample of isolates.

RESULTS: From June 2003 through January 2004, there were approximately 215 (27%) military personnel identified with rAcb on admission. Forty-seven cases of HA acquisitions were identified. Sites of infection included bloodstream, respiratory tract, urine, and wounds. The mean length of stay until acquisition was 30 days and mean age was 50. The epidemiologic investigation revealed two positive environmental samples, no positive growth on providers' hands, and three hemodialysis outpatients not previously identified as colonized. PFGE on patient samples showed no single epidemic strain and no geographically associated strain.

LESSONS LEARNED: The presence of a large admission reservoir and in-house reservoir of rAcb resulted in significant HA transmission. As a result of these findings, education was increased to all levels of staff, patients, and families; patient education brochures were developed; surveillance activities were increased; and monitoring of compliance with hand hygiene and contact precautions was initiated. Results of monitoring showed that more assertive action on compliance is needed. These aggressive infection control practices reduced but did not eliminate transmission, probably due to the continued influx of colonized patients.

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Multidrug-resistant *E. Coli* Outbreak in a neonatal intensive care unit (NICU)

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BACKGROUND: In August 2004, infection control identified six neonates with *E. coli*, all located in Section A of the medical center's 30-bed NICU. Initial investigation revealed that four of the six patients had multidrug-resistant (MDR) strains (two with nosocomial colonization in the respiratory tract, two with nosocomial bacteremia; one patient with bacteremia developed meningitis with MDR *E. coli*). Of the remaining two patients, both had antibiotic-sensitive strains of *E. coli* in blood specimens, while one had an MDR *E. coli* in a respiratory sample. Five of six patients weighed 1500g or less. Data indicated a rise in patient days of 33% in August, as compared to the average monthly patient days in the first 6 months of 2004. No significant changes to nursing staffing levels occurred during 2004.

METHODS: Immediate actions: Surveillance cultures of all patients (rectal, tracheal, groin, umbilical); segregation of *E. coli*-positive neonates in isolettes on one side of NICU-A; designated staff assigned to *E. coli*-positive neonates; unit closed to new admissions; and strict compliance with proper handwashing. Additional interventions: once-daily surgical scrub (4% chlorhexidine); use of a gown for all healthcare workers having direct patient contact; strict enforcement of policy prohibiting artificial nails; proper cleaning of stethoscopes; environmental cultures of equipment and procedure carts; terminal cleaning of the NICU sections (including shelves, telephones, sinks).

RESULTS: DNA typing using pulsed-field gel electrophoresis (PFGE) revealed that all MDR *E. coli* strains were related; conversely, the drug-sensitive strains had a unique PFGE pattern. One resuscitation bag and one procedure cart were positive for the MDR *E. coli* strain. The isolate identified from the cart was identified as being of an indistinguishable pattern from the MDR strains obtained from the neonates. No additional cases of *E. coli* were identified. No direct source of the organism was identified, whether having originated from a parent or healthcare worker.

CONCLUSIONS: In the absence of a direct source, a comprehensive plan addressing both immediate actions and long-range solutions is often necessary to prevent continued occurrences during an outbreak situation. Equipment contaminated with the causative organism is an area of concern as this may have contributed to transfer of the organism during the outbreak. Whether a rising ratio of patients to staff may have been a contributing factor needs further investigation.

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Hospital-acquired influenza: Seek and ye shall find

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BACKGROUND: In a 212-bed acute care community hospital that is part of a large academic teaching center in New York City, three inpatients acquired influenza A during their hospitalizations in December 2004. The first case was on a geriatric unit; the other two were on a telemetry unit. No hospital-acquired (HA) influenza cases had previously been described in this hospital. The New York City Department of Health had received no comparable reports from any other acute care facilities in the area.

METHODS: All cases were diagnosed by nasopharyngeal swabs sent for enzyme immunoassay (EIA), direct fluorescent antibody (DFA), and viral culture. The first HA influenza patient was a readmission. As a result, another symptomatic inpatient was tested (positive). Surveillance testing was then performed and a third case was identified. The emergency department staff increased their testing for community-acquired (CA) influenza; patients presenting with fever over 100°F and respiratory symptoms were swabbed. Those being admitted were placed in single rooms on droplet isolation. Inpatients who spiked fevers and exhibited respiratory symptoms were swabbed and isolated. Positively identified influenza patients were cohorted and treated with amantadine or oseltamivir. Staff members exposed to non-isolated flu patients were given prophylaxis unless they had been vaccinated at least 2 weeks before.

RESULTS: No more HA cases occurred. We were unable to identify sources for the three HA cases. Two of the three had received influenza vaccinations greater than 2 weeks before their admissions. The rate of CA influenza