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Update: Detection of a Verona Integron-Encoded Metallo-Beta-Lactamase in *Klebsiella pneumoniae* — United States, 2010

In July 2010, CDC was notified of a patient with a carbapenem-resistant *Klebsiella pneumoniae* strain that produced a Verona integron-encoded metallo-beta-lactamase (VIM) carbapenemase (*1*) not reported previously among *Enterobacteriaceae* in the United States. The patient was a woman from the United States who became ill with diarrhea during a Mediterranean cruise and was hospitalized in Greece, where she received a diagnosis of sepsis and *Clostridium difficile* infection. After 12 days in two hospitals in Greece, she was transferred to a hospital in the United States for continued management of sepsis and acute renal failure. On admission, blood was drawn for culture through a central venous catheter that had been placed while the patient was hospitalized in Greece. The blood subsequently grew carbapenemase-producing *Klebsiella pneumoniae* exhibiting the VIM resistance mechanism, which has been described previously in Greece but not in the United States. Further testing showed the isolate to be nonsusceptible to all antimicrobials usually used to treat *Klebsiella*. Despite the resistance of the *Klebsiella* strain, the patient recovered sufficiently to be discharged after 26 days in the U.S. hospital. A search for other patients colonized with the same isolate was conducted by screening 22 patients whose U.S. hospital stays overlapped with this patient; no carbapenem-resistant *Enterobacteriaceae* (CRE) were detected.

This report of a VIM-producing CRE follows a June 2010 report of three cases of New Delhi metallo-beta-lactamase (NDM-1)–producing *Enterobacteriaceae* (*2*). However, the most common mechanism of carbapenem resistance among *Enterobacteriaceae* in the United States remains the production of the *Klebsiella pneumoniae* carbapenemase (KPC). KPC-producing *Enterobacteriaceae* are widespread in the United States and other countries (*3*). Cases of CRE are a significant, emerging public health problem regardless of the mechanism of carbapenem resistance, and procedures to rapidly recognize and report CRE cases to infection prevention personnel should be in place in all acute and long-term–care facilities. Facilities that have not identified cases of CRE should undertake periodic laboratory reviews to identify cases. Patients with CRE should be managed using contact precautions, and patients exposed to CRE patients (e.g., roommates) should be screened with surveillance cultures (*3*). State and local health departments should promote adoption of current prevention guidance and monitoring of the prevalence of these organisms in their jurisdictions (*3*). Public health officials and health-care facility staff can consult with the Division of Healthcare Quality Promotion at CDC on the best practices for identifying and preventing transmission of these organisms (e-mail: hip@cdc.gov).

References

1. Vatopoulos A. High rates of metallo-beta-lactamase-producing *Klebsiella pneumoniae* in Greece—a review of the current evidence. Euro Surveill 2008;13:1–6.
2. CDC. Detection of *Enterobacteriaceae* isolates carrying metallo-beta-lactamase—United States, 2010. MMWR 2010;59:750.
3. CDC. Guidance for control of infections with carbapenem-resistant or carbapenemase-producing *Enterobacteriaceae* in acute care facilities. MMWR 2009;58:256–60.

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