# Detection of *Enterobacteriaceae* Isolates Carrying Metallo-Beta-Lactamase — United States, 2010

During January–June 2010, three *Enterobacteriaceae* isolates carrying a newly described resistance mechanism, the New Delhi metallo-beta-lactamase (NDM-1) (*1*), were identified from three U.S. states at the CDC antimicrobial susceptibility laboratory. This is the first report of NDM-1 in the United States, and the first report of metallo-beta-lactamase carriage among *Enterobacteriaceae* in the United States. These isolates, which include an *Escherichia coli*, *Klebsiella pneumoniae*, and *Enterobacter cloacae*, carry $bla_{NDM\text{-}1}$, which confers resistance to all beta-lactam agents except aztreonam (a monobactam antimicrobial) (*1*); all three isolates were aztreonam resistant, presumably by a different mechanism. In the United Kingdom, where these organisms are increasingly common, carriage of *Enterobacteriaceae* containing $bla_{NDM\text{-}1}$ has been closely linked to receipt of medical care in India and Pakistan (*2*). All three U.S. isolates were from patients who received recent medical care in India.

Carbapenem resistance and carbapenemase production conferred by $bla_{NDM\text{-}1}$ is detected reliably with phenotypic testing methods currently recommended by the Clinical and Laboratory Standards Institute (*3*), including disk diffusion testing and the modified Hodge test (*4*). Carbapenem resistance in all three of these isolates was detected in the course of routine testing. Current CDC infection control guidance for carbapenem-resistant *Enterobacteriaceae* also is appropriate for NDM-1–producing isolates (*5*). This includes recognizing carbapenem-resistant *Enterobacteriaceae* when cultured from clinical specimens, placing patients colonized or infected with these isolates in contact precautions, and in some circumstances, conducting point prevalence surveys or active-surveillance testing among other high-risk patients. Laboratory identification of the carbapenem-resistance mechanism is not necessary to guide treatment or infection control practices but should instead be used for surveillance and epidemiologic purposes.

Clinicians should be aware of the possibility of NDM-1–producing *Enterobacteriaceae* in patients who have received medical care in India and Pakistan, and should specifically inquire about this risk factor when carbapenem-resistant *Enterobacteriaceae* are identified. CDC asks that carbapenem-resistant isolates from patients who have received medical care within 6 months in India or Pakistan be forwarded through state public health laboratories to CDC for further characterization. Infection control interventions aimed at preventing transmission, as outlined in current guidance (*5*), should be implemented when NDM-1–producing isolates are identified, even in areas where other carbapenem-resistance mechanisms are common among *Enterobacteriaceae*. Additional information is available by contacting Brandi Limbago or Alex Kallen at search@cdc.gov.

## References


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