

Attachment B: Infection prevention and control guidance for carbapenem-resistant *Enterobacteriaceae* (or carbapenemase-producing *Enterobacteriaceae*) in acute care facilities – CDC and the Healthcare Infection Control Practices Advisory Committee

Infection Prevention and Control

- All acute care facilities should implement contact precautions for patients colonized or infected with carbapenem-resistant *Enterobacteriaceae* (CRE) or carbapenemase producing *Enterobacteriaceae*. No recommendations can be made regarding when to discontinue contact precautions.

Laboratory

- Clinical microbiology laboratories should follow Clinical and Laboratory Standards Institute guidelines for susceptibility testing (1) and establish a protocol for detection of carbapenemase production (performance of the modified Hodge test)
- Clinical microbiology laboratories should establish systems to ensure prompt notification of infection prevention staff of all *Enterobacteriaceae* isolates that are nonsusceptible to carbapenems or *Klebsiella spp* or *Escherichia coli* isolates that test positive for carbapenemase

Surveillance

- All acute care facilities should review clinical culture results for the preceding 6-12 months to determine whether previously unrecognized CRE have been present in the facility
 - If this review identifies previously unrecognized CRE, a point prevalence survey (a single round of active surveillance cultures) should be performed to look for CRE in high-risk units (e.g: intensive care units, units where previous cases have been identified and units where many patients are exposed to broad-spectrum antimicrobials).
 - If this review does not identify previously unrecognized CRE, monitoring for clinical infections should be continued.
- If CRE or carbapenemase-producing *Klebsiella spp.* or *E coli* are detected from one or more clinical cultures **OR** if the point prevalence survey reveals unrecognized colonization, the facility should investigate for possible transmission by:
 - Conducting active surveillance testing of patients with epidemiological links to a patient with CRE infection (e.g., patients in the same unit or who have been cared for by the same health professional)
 - Continue active surveillance periodically (e.g, weekly) until no new colonization or infection suggesting cross- transmission are identified
 - If transmission of CRE is not identified after repeated surveillance testing, consider altering the surveillance strategy by performing periodic point prevalence surveys in high-risk units.
 - In areas where CRE are endemic an increased likelihood exists for importation of CRE, and the procedures outlined might not be sufficient to prevent transmission. Facilities in such areas should monitor clinical cases and consider additional strategies to reduce rates of CRE as described in the 2006 Tier 2 guidelines for management of multi-drug resistant organisms in health-care settings (2). Recommendations for rate calculations have been described previously (3).

References:

1. Clinical and Laboratory Standards Institute. 2009 performance standards for antimicrobial susceptibility testing. Nineteenth information supplement (M100 – S19). Wayne, PA: Clinical and Laboratory Standards Institute; 2009.
2. CDC, Healthcare Infection Control Practices Advisory Committee. Management of multi-drug resistant organisms in healthcare settings, 2006. Atlanta, GA: US Department of Health and Human Services, CDC, Healthcare Infection Control Practices Advisory Committee; 2007. Available at <http://www.cdc.gov/ncidod/dhqp/pdf/ar/mdroguidine2006.pdf>
3. Cohen AL, Calfee D, Fridkin SK, et al. Recommendations for metrics for multidrug-resistant organisms in healthcare settings. SHEA/HICPAC position paper. Infect Control Hosp Epidemiol 2008;29:901-913.