Regional outbreak of New Delhi metallo-beta-lactamase-producing carbapenem-resistant Enterobacteriaceae, Italy, 2018–2019

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Summary
A large outbreak of New Delhi metallo-beta-lactamase (NDM)-producing carbapenem-resistant Enterobacteriaceae (CRE) has been reported from the Tuscany region in Italy. Between November 2018 and May 2019, seven Tuscan hospitals notified a total of 350 cases.

Due to its size and the resulting change in the epidemiology of CRE, the reported outbreak is a significant event, despite previous endemicity of Klebsiella pneumoniae carbapenamase (KPC)-producing CRE in this geographic area.

The change in the type of carbapenemase further reduces treatment options because NDM-producing CRE are not susceptible to some of the new beta-lactam/beta-lactamase inhibitor combinations such as ceftazidime-avibactam and meropenem-vaborbactam.

Numerous reported outbreaks and examples of cross-border transmission of NDM-producing CRE in the European Union/European Economic Area (EU/EEA) demonstrate the transmission potential of NDM-producing CRE in European healthcare systems. Outbreaks such as the one in Tuscany present a risk for cross-border transmission and further spread to other EU/EEA countries, especially since the affected area is a major tourist destination.

Given the previous rapid establishment of KPC-producing CRE in Italy (which resulted in an endemic situation), the risk for further spread of NDM-producing CRE from the current outbreak is considered to be high for Italy and moderate for cross-border spread to other EU/EEA countries.

Sporadic cases of community acquisition of NDM-producing CRE have also been described for other European countries. However, the introduction and dissemination of these bacteria have mainly been associated with healthcare settings. Therefore, the risk of acquisition of NDM-producing CRE related to this outbreak is likely restricted to persons with recent healthcare contact.

Comment
The outbreak illustrates that hospitals are “hot-spots” for multidrug-resistant, MDR, bacteria. The ECDC describe the outbreak as a “significant event” and highlight that the
outbreak “presents a risk for cross-border transmission and further spread to other EU/EEA countries”.
The ECDC report emphazises the need for isolation of suspected or confirmed cases and good infection control practices among health care staff.

We would like to highlight the need for antibiotic stewardship programs, probably a national program supervised and monitored by the national public health authorities. Such a program must include mandatory reporting of cases and consumption of antibiotics.

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