

Rise of carbapenem-resistant Enterobacteriaceae

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Infections with bacteria resistant to carbapenems, a group of highly effective antibiotics, pose a significant threat to patients and healthcare systems in all EU/EEA countries, warns ECDC in a Rapid Risk Assessment.

Resistance to carbapenems has been reported with increasing frequency and geographical spread since the beginning of the 1990s. The global rise of carbapenem [resistance](#) in a certain family of bacteria called Enterobacteriaceae, or carbapenem-resistant Enterobacteriaceae (CRE), represents a threat to healthcare delivery and patient safety.

"We should be very concerned about the rise in carbapenem resistance in the EU/EEA as there are very few options for the [treatment](#) of patients with CRE infections" says Dominique Monnet, Head of ECDC's Antimicrobial Resistance and Healthcare-Associated Infections Programme. "In recent years, the proportions of carbapenem resistance in *Klebsiella pneumoniae* - a type of Enterobacteriaceae—rapidly increased to high levels in Greece, Italy and Romania. The same could happen to other EU/EEA countries if appropriate measures are not taken. But the spread of CRE can likely be controlled in most countries through the implementation of appropriate prevention and control measures in hospitals and other healthcare settings."

CRE are often a cause of [urinary tract infections](#) and [bloodstream infections](#) in hospital settings. Such infections are associated with prolonged hospital stays, high treatment costs, treatment failures and

high mortality, primarily due to delays in the administration of effective treatment and the limited availability of treatment options.

Data from the European Antimicrobial Resistance Surveillance Network (EARS-Net) for 2016 show large differences in the national percentages of [carbapenem](#) resistant bloodstream infections caused by *Klebsiella pneumonia*, ranging from 0% to as high as 67%, depending on the country. Although prevalence is still low in most European countries, Romania, Italy and Greece, with 31%, 34% and 67%, respectively, are among the countries reporting the highest prevalences worldwide.

In general, if the frequency of resistance to an antibiotic is high, it cannot be recommended for empiric treatment anymore due to the risk of failure. In case of CRE infection, there is no good antibiotic alternative for empiric treatment that does not carry serious side effects or other complications.

Introduction of CRE into low-prevalence EU/EEA countries can happen when patients are transferred from an EU Member State with a high level of CRE, or from other countries or regions of the world with high reported levels of CRE, e.g. countries in the eastern and southern Mediterranean regions, the Indian subcontinent and south-east Asia.

Timely and appropriate laboratory investigation and reporting is essential to avoid delays in appropriate treatment and in the implementation of appropriate infection control measures. Strict adherence to [infection](#) control measures and implementation of comprehensive antimicrobial stewardship programmes are key to prevent and control the emergence and spread of CRE, as highlighted in the ECDC rapid risk assessment.

More information: [ecdc.europa.eu/en/publications ... riaceae-first-update](https://ecdc.europa.eu/en/publications/_ga=2.248511912.1522111111.1522111111.1522111111)

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