Summary of the latest data on antibiotic resistance in the European Union and European Economic Area (EARS-Net)

The results presented in this summary are based on antimicrobial resistance (AMR) data from invasive isolates reported to the European Antimicrobial Resistance Surveillance Network (EARS-Net). They draw on data reported by 30 European Union (EU) and European Economic Area (EEA) countries in 2019 (analysed data refer to 2018) and trend analyses of data reported by the participating countries for the period 2015 to 2018. The latest country-specific data can be retrieved from the ECDC Surveillance Atlas of Infectious Diseases at https://atlas.ecdc.europa.eu/, or by accessing the links available in the text of this summary. More detailed analyses will be available in the EARS-Net Annual Report 2018 that will be published on 18 November 2019.

As in previous years, the AMR situation in Europe displays wide variations, depending on bacterial species, antimicrobial group, and geographical region. For several bacterial species–antimicrobial group combinations, a north-to-south and west-to-east gradient is evident. In general, lower resistance percentages were reported by countries in the north while higher percentages were reported in the south and east of Europe. The high variability in AMR across EU/EEA countries emphasises the need for significant reductions in antimicrobial resistance by extending and strengthening current best practice.

In 2018, more than half of the *Escherichia coli* isolates reported to EARS-Net – and more than a third of the *Klebsiella pneumoniae* isolates – were resistant to at least one antimicrobial group under regular surveillance, and combined resistance to several antimicrobial groups was frequent. Resistance percentages were generally higher in *K. pneumoniae* than in *E. coli*. While carbapenem resistance remained rare in *E. coli*, several countries reported carbapenem resistance percentages above 10% for *K. pneumoniae*. Carbapenem resistance was also common in *Pseudomonas aeruginosa* and *Acinetobacter* species, and percentages were higher compared with *K. pneumoniae*. For all four gram-negative bacteria, the countries reporting the highest carbapenem resistance percentages were also among the countries reporting the highest resistance percentages for other antimicrobial groups. For most gram-negative bacterial species–antimicrobial group combinations, changes in resistance percentages between 2015 and 2018 were moderate, and resistance remained at previously reported high levels.

For *Streptococcus pneumoniae*, the resistance situation appeared stable, but with large inter-country variations. For *Staphylococcus aureus*, the decline in the percentage of meticillin-resistant isolates (MRSA) reported in previous years continued in 2018. Nevertheless, MRSA remains an important pathogen in the EU/EEA, as the levels of MRSA were still high in several countries, and combined resistance to other antimicrobial groups was common.

An especially worrying development was reported for vancomycin-resistant *Enterococcus faecium*, with an increase of the EU/EEA population-weighted mean percentage from 10.5% in 2015 to 17.3% in 2018. Corresponding increasing trends highlight the need for close monitoring to better understand the epidemiology, clonal diversity, and risk factors associated with infection. Contrary to many other species under surveillance, no distinct geographical pattern could be seen for vancomycin-resistant *E. faecium*, as high percentages were reported from both southern, eastern and northern Europe.

The high levels of AMR for several important bacterial species–antimicrobial group combinations reported to EARS-Net for 2018 show that AMR remains a serious challenge in the EU/EEA. Despite the political prioritisation of AMR as a threat to public health and the availability of evidence-based guidance for antimicrobial stewardship, adequate microbiological capacity, and infection prevention and control, it is clear that current public health actions are not enough to tackle the present situation of antimicrobial resistance in Europe.

Read more:

- See surveillance data from the ECDC Surveillance Atlas on antimicrobial resistance: https://www.ecdc.europa.eu/en/antimicrobial-resistance/surveillance-and-disease-data/data-ecdc

Key facts about antimicrobial resistance:

- Key messages: https://antibiotic.ecdc.europa.eu/en/get-informed/key-messages
- Factsheets: https://antibiotic.ecdc.europa.eu/en/get-informed/factsheets
- Patient stories: https://antibiotic.ecdc.europa.eu/en/patient-stories
- Videos: https://antibiotic.ecdc.europa.eu/en/get-informed/videos
- Infographics: https://antibiotic.ecdc.europa.eu/en/get-informed/infographics