

Key messages: Antimicrobial use in healthcare settings

In 2016-2017, ECDC coordinated the second point-prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals and the third point-prevalence survey of healthcare-associated infections and antimicrobial use in European long-term care facilities. The findings are summarised in three Eurosurveillance articles:

[Antimicrobial use in European acute care hospitals: results from the second point prevalence survey \(PPS\) of healthcare-associated infections and antimicrobial use, 2016 to 2017](#). Euro Surveill. 2018;23(46):1800393. Plachouras D, Kärki T, Hansen S, Hopkins S, Lyytikäinen O, Moro ML, et al.

[Antimicrobial use in European long-term care facilities: results from the third point prevalence survey of healthcare-associated infections and antimicrobial use, 2016 to 2017](#). Euro Surveill. 2018;23(46):1800394. Ricchizzi E, Latour K, Kärki T, Buttazzi R, Jans B, Moro ML, et al.

[Prevalence of healthcare-associated infections, estimated incidence and composite antimicrobial resistance index in acute care hospitals and long-term care facilities: results from two European point prevalence surveys, 2016 to 2017](#). Euro Surveill. 2018;23(46):1800516. Suetens C, Latour K, Kärki T, Ricchizzi E, Kinross P, Moro ML, et al.

The key messages are based on the results of the point prevalence surveys.

Antimicrobial use in European acute care hospitals

Antimicrobial agents to treat infections are life-saving, but overuse of antimicrobials may result in more frequent adverse effects and emergence of multidrug-resistant microorganisms.

1 in 3 patients received at least one antimicrobial on any given day.

Antimicrobials are sometimes given to patients to prevent infections, for example to prevent infections in relation with surgical procedures.

1 in 2 surgical prophylaxis courses were prescribed for more than one day.

One dose is usually sufficient for surgical prophylaxis. Prolonged surgical prophylaxis represents a significant source of unnecessary use of antimicrobials in hospitals, which needs to be addressed across Europe.

1 in 10 antimicrobial prescriptions were for medical prophylaxis, for which there only

is a limited number of indications.

A proportion of antimicrobial prescriptions for medical prophylaxis may therefore represent unnecessary use.

The proportion of broad-spectrum antibiotics varied from 16% to 62% across Europe.

Broad-spectrum antibiotics are not always necessary and their use drives antimicrobial resistance. The wide variation in their use indicates the need to review their indications in many countries and hospitals.

7 out of 10 antimicrobials were administered parenterally. Parenteral-to-oral switch was reported in only 4% of the prescriptions of parenteral antimicrobials.

76% of hospitals reported the availability of antimicrobial use guidelines. 54% reported some dedicated staff time for antimicrobial stewardship.

Antimicrobial use in European long-term care facilities

Antimicrobials are commonly prescribed and contribute to the development of antimicrobial resistance in long-term care facilities (LTCFs).

1 in 20 residents received at least one antimicrobials on any given day.

7 in 10 antimicrobials were prescribed for treatment of an infection and 3 in 10 for prophylaxis.

3 out of 4 of the prophylaxis courses were given to prevent urinary tract infections. While this practice may reduce the risk of infection in women, there is no evidence about its effectiveness when applied widely to elderly patients. In addition, this practice is associated with increased antimicrobial resistance. Most prophylaxis courses may therefore represent unnecessary use of antimicrobials.

Depending on the country, all or none of the LTCFs have antimicrobial use guidelines. Moreover, only 1 in 5 LTFCs have regular training on appropriate antimicrobial prescribing.

Healthcare-associated infections and antimicrobial resistance European acute care hospitals and long-term care facilities

Although some HAIs can be treated easily, others may more seriously affect a patient's health, increasing their stay in the hospital and hospital costs. HAIs in hospitals alone cause more deaths in Europe than any other infectious disease under surveillance at ECDC.

On any given day:

- 1 in 15 hospital patients have at least one HAI;
- 98 000 patients have at least one HAI;
- 1 in 24 long-term care facilities residents have at least one HAI;
- 124 000 residents have at least one HAI.

A total of 8.9 million HAIs were estimated to occur each year in European hospitals and long-term care facilities combined.

HAIs in hospitals (for example, pneumonia, surgical site infections and bloodstream infections) are usually more severe and have a higher impact than HAIs in long-term care facilities (for example, respiratory infections other than pneumonia, urinary tract infections and skin and soft tissue infections).

More than half of certain HAIs are considered preventable.

HAIs are frequently treated without taking microbiological samples or samples remain negative.

The responsible microorganism was identified in 53% of HAIs in hospitals and only in 19% of HAIs in long-term care facilities.

1 in 3 bacteria associated with HAIs, both in hospitals and in long-term care facilities, was resistant to antibiotics.

What is a Point prevalence survey? A prevalence survey is a count of the number of patients with a particular condition/treatment (in this case either a healthcare-associated infection or an antimicrobial agent) at a particular time (in this case a day), as a proportion of the total number of patients who are hospitalised at that particular time.