

Each year in the European Union, over 4 million patients acquire a healthcare-associated infection (HAI). These infections are estimated to contribute to roughly 110 000 deaths across Europe, along with substantial morbidity and cost for health systems (ECDC, 2016a).

HAIs are mostly acquired in health care settings as a result of care or contact with the care environment (WHO, 2016). They can include surgical site infections and infections related to use of a medical device among others. At least 20% of healthcare-associated infections are estimated to be avoidable. Compounding the impact of HAIs are infections due to bacteria resistant to antimicrobials. High and inappropriate use of antibiotics and deficiencies in infection prevention and control contribute to antimicrobial resistant HAIs in these environments. Resistant infections can be difficult to treat leading to complications, longer hospital stays, or death.

Figure 6.24 shows the percentage of patients reported by selected hospitals in EU/EEA member states to have a healthcare-associated infection in 2011/12 together with the predicted percentage of patients that would be expected to have an HAI according to a model incorporating differences in patient characteristics. The proportion of observed HAIs ranges from 2.3% in Latvia to 10.8% in Portugal. Romania and Lithuania also showed low proportions of patients with HAIs while Greece and Denmark were both well over the EU average of 5.9%. The majority of EU countries (18/28) showed observed rates of HAIs that were lower than predicted by the model. Along with the lowest observed rates, Latvia also was the country showing the largest difference between the expected and observed values, with an observed rate over 3 percentage points below expected. This difference may be attributed, in part, to overall low use of antibiotics and lower levels of resistance in this country. Clear guidelines and procedures in handling patients with resistant bacteria along with recent improvements in Latvia's hospital system may also play a role (ECDC, 2016b; OECD, 2016). Denmark and Portugal reported the highest rates of HAI, which were 2 and 3 percentage points higher than expected respectively. These results highlight the need for effective infection management in hospitals including antibiotic prescribing guidelines.

Figures 6.25 and 6.26 show the proportions of HAIs by medical specialty and by infection type. Across EU countries, HAI prevalence was highest among patients admitted to Intensive Care Units (ICUs), where 19.5% of patients had at least one HAI compared to an average of 5.2% for other specialty areas. Other high-risk areas were haematology/oncology (16.4%), burns (22.8%), transplant/cancer surgery (12.0%) and digestive tract surgery (10.2%). Across EU countries, patients in medical specialty areas including general medicine, cardiology, oncology and neurology among others represented the majority of HAI cases at over 38%. Surgical specialty areas represented nearly 35% of infections, while intensive care patients accounted for 16% of infections. Geriatrics, paediatrics and the remaining specialty areas together made up 11% of infections. The most common infection types were surgical site infections which accounted for 19.6% of HAIs,

pneumonia (19.4%), urinary tract infections (19.0%), bloodstream infections (10.6%) and gastrointestinal infections (7.6%).

Improving rates of HAIs means implementing measures such as ensuring adequate training in infection prevention control in health care staff, provision of specialists in infection prevention, adequate laboratory capacity to ensure diagnostic testing, hand hygiene and basic precautions during invasive procedures, monitoring and feedback of trends and continued implementation of the measures set out in the Council of the European Union's Recommendation on Patient Safety, including the Prevention and Control of Healthcare-Associated Infections (2009/C 151/01).

### Definition and comparability

The data presented are based on a point prevalence survey (PPS) of European hospitals conducted in 2011-12 (ECDC, 2013). In countries with a low number of participating hospitals including Austria, Croatia, the Czech Republic, Estonia, Norway, Romania, and a very low number of participating hospitals including Denmark, and Sweden, there was high variability in estimates and potential bias. Although risk adjustment compensated for differences in case mix, including those resulting from less representative samples, it cannot account for selection bias due to low representativeness.

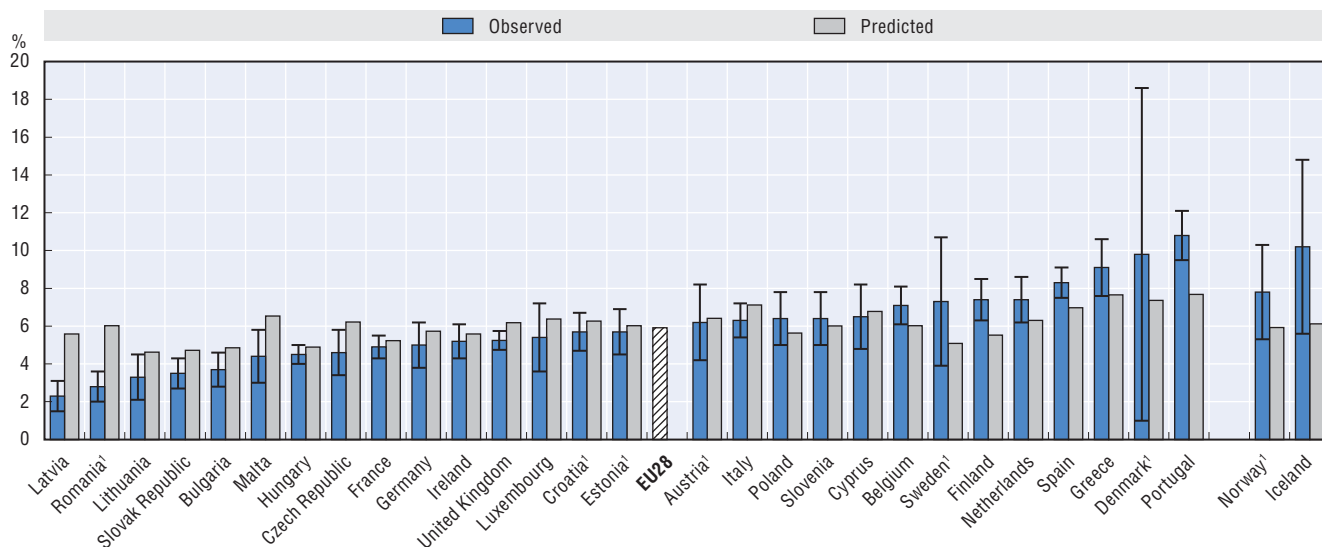
Validation studies carried out in four countries during the national PPS showed an average sensitivity to HAI of 72%, resulting in underestimation of the true HAI prevalence. This was the case particularly in countries with lower national HAI prevalence and/or for which the observed HAI prevalence was lower than expected based on the case mix. Different levels of sensitivity in countries may explain part of the differences in observed versus expected values.

Similar surveys are planned every five years with a 2016-17 survey currently under way.

### References

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- ECDC (2013), "Point Prevalence Survey of Healthcare-associated Infections Antimicrobial Use in European Acute Care Hospitals 2011-12", ECDC, Stockholm.
- OECD (2016), *OECD Reviews of Health Systems: Latvia 2016*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264262782-en>.
- WHO (2016), "Health Care-associated Infections Fact Sheet", WHO, Geneva.

### 6.24. Observed and predicted percentage of hospitalised patients with at least one healthcare-associated infection, 2011-12



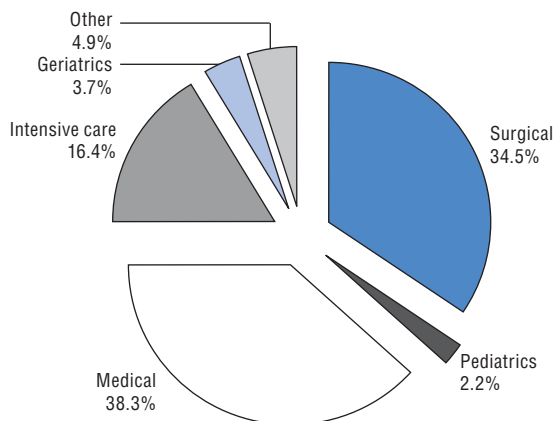
Note: 95% confidence intervals represented by H.

1. Data representativeness is limited in Austria, Croatia, the Czech Republic, Estonia, Norway and Romania and very limited in Denmark and Sweden.

Source: ECDC (2013), Point Prevalence Survey.

StatLink <http://dx.doi.org/10.1787/888933429593>

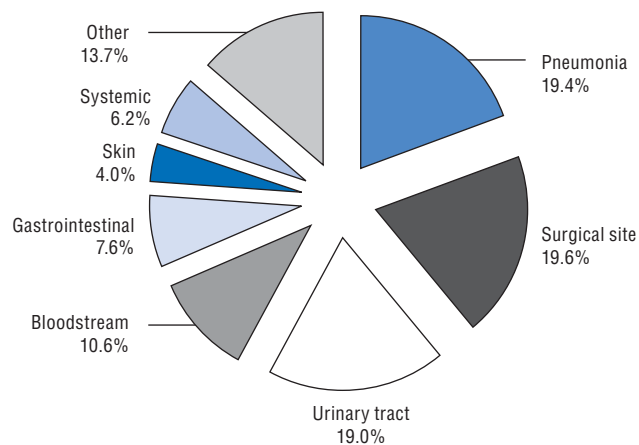
### 6.25. Percentage of healthcare-associated infections by medical specialty, 2011-12



Source: ECDC (2013), Point Prevalence Survey.

StatLink <http://dx.doi.org/10.1787/888933429601>

### 6.26. Percentage of healthcare-associated infections by infection type, 2011-12



Source: ECDC (2013), Point Prevalence Survey.

StatLink <http://dx.doi.org/10.1787/888933429619>



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