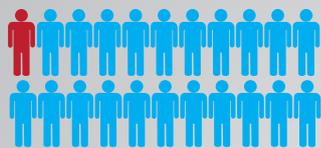


Executive Summary

Scottish National HAI and Antimicrobial Prescribing PPS 2016

Approximately **1 in 22** acute adult inpatients had at least 1 HAI



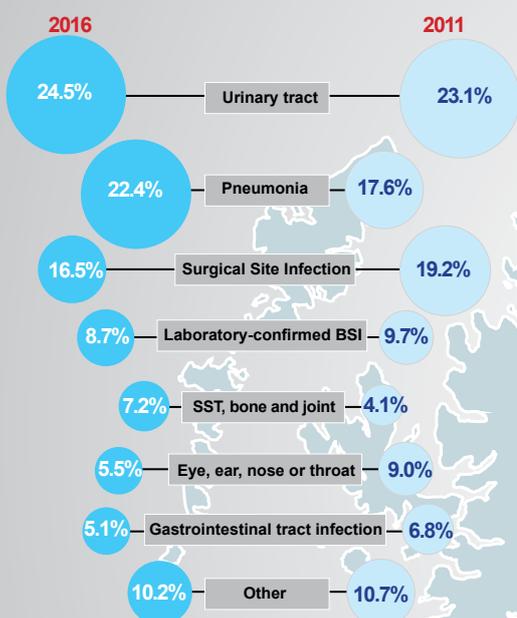
↓ LOWER THAN IN 2011

Approximately **1 in 3** acute adult inpatients were receiving antimicrobials



↑ HIGHER THAN IN 2011

HAI OCCURRING IN ACUTE ADULT PATIENTS



HAI and AMR remain a public health threat across all care settings in Scotland.

A continued focus on IPC quality improvement and antimicrobial stewardship is required to ensure patient safety and minimise the threat of AMR.

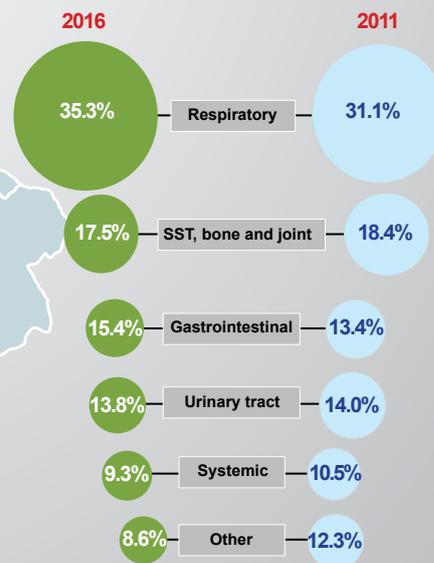
Antimicrobial Stewardship Priorities

- Promote documentation of indication and compliance with local policy in all clinical settings
- Reduce unnecessary prescribing by undertaking timely reviews, promoting IV to oral switch and improving documentation
- Reduce unnecessary prolongation of surgical prophylaxis beyond once only doses
- Improve compliance with local carbapenem and piperacillin/tazobactam prescribing policies
- Improve compliance with local prescribing policies for broad spectrum antimicrobials associated with an increased risk of *Clostridium difficile* infection

IPC Quality Improvement Priorities

- Multimodal national programmes to prevent pneumonia in non-ventilated patients and UTI in non-catheterised patients
- Local multimodal quality improvement strategies
- Implementation of invasive device insertion and maintenance bundles with a focus on reviewing the need for the continued use of the device
- Interventions to reduce the risk of UTI and other infections in older people across all settings
- Prevention of Gram negative infections across health and social care
- Prevention of sepsis and bloodstream infections in neonates
- Improved availability of ABHR at point of care and the availability of a 7 day microbiology service
- Increased single room and isolation capacity
- Integrated public health approach to prevention of infection
- Review of the specialised workforce to deliver strategies to reduce infection risk in all settings

INFECTIONS BEING TREATED WITH ANTIMICROBIALS IN ACUTE ADULT PATIENTS



Characteristics of the patient population

The patients included in the survey of acute hospitals were older and sicker compared with the 2011 survey. More than half of the patients in acute hospitals were over 65 years and a quarter over 80 years. More than two fifths of patients had the most severe co-morbidity scores and this was higher than in 2011. In non-acute care, more than three quarters were aged over 65 years and half over 80 years. Two thirds of patients had the most severe co-morbidity scores.

HAI occurring in paediatric patients

The prevalence of HAI was 2.7%; this was not significantly different from 2011. The majority of the infections occurred in neonates, including those in neonatal ICU. The most common HAI types reported in these patients were clinical sepsis and bloodstream infections.

HAI occurring in non-acute patients

A 25% random sample of non-acute hospitals was included in the survey. The prevalence of HAI in the sample was 3.2%. Urinary tract infections accounted for more than half of all HAI in this patient group.

Microbiology

The most common organism reported in acute and non-acute care was *Escherichia coli*; this organism has now replaced *Staphylococcus aureus* as the most commonly reported organism. Microbiology data were reported only for HAI where there was available microbiology at the time of survey.

Invasive device use

A third of acute adult patients had a PVC in situ on the day of survey and the prevalence was higher in 2016 compared with 2011 after adjustment for changes in the patient case mix. One in five patients were catheterised and there was no difference in the prevalence between 2016 and 2011.

Antimicrobial prescribing in paediatric patients

One in three paediatric patients were receiving antimicrobials at the time of survey and this was not significantly different from 2011. The most common reason for prescribing was treatment of systemic infections such as clinical sepsis and febrile neutropenia. One in five paediatric patients were receiving antimicrobials as medical prophylaxis.

Antimicrobial prescribing in non-acute patients

One in eight non-acute patients were receiving antimicrobials at the time of survey. Approximately half of antimicrobials were prescribed to treat urinary or respiratory tract infection and one in five were prescribed as medical prophylaxis.

Antimicrobial prescribing quality indicators

Compliance with local policy and documentation in acute care was significantly higher in 2016 compared with 2011. However, approximately a quarter of broad spectrum antimicrobials associated with an increased risk of CDI and a fifth of very broad spectrum antimicrobials, namely carbapenems and piperacillin/tazobactam, were not compliant with local prescribing policy.

Epidemiology of key infection types and associated antimicrobial prescribing

A summary of 4 key infection types: urinary tract infection, pneumonia, surgical site infection and bloodstream infection are provided in separate [summary infographics](#).

IPC and antimicrobial stewardship structure and process indicators

These indicators have been collected for the first time in Scotland and will inform future development of local and national IPC programmes. The following areas for improvement were identified: improving ABHR availability and the availability of data on ABHR use; single room provision and isolation capacity; improving coverage of a seven day microbiology service; development of multimodal strategies for prevention of pneumonia and urinary tract infections that are not device associated; and the role of ICNs, ICDs and the resources dedicated to antimicrobial stewardship.