

# Publication Summary



## Report on Antimicrobial Use and Resistance in Humans in 2011

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### About this Release

This is the fourth annual report published by Health Protection Scotland (HPS)/Information Services Division (ISD) of NHS National Services Scotland (NSS) that combines information on antimicrobial use and resistance in humans in Scotland. The information presented here covers the period to the end of 2011, which is the third year following the establishment of the Scottish antimicrobial stewardship programme coordinated by the Scottish Antimicrobial Prescribing Group (SAPG).

### Key Points

- In 2011, the use of systemic antibacterials in primary care (items/1000 population/day) was 3.4% higher than in 2010, corresponding to an increase of 162 000 prescription items. However there was a continued reduction in the use of broad spectrum antibacterials associated with *Clostridium difficile* infection (CDI); cephalosporins 23.8%; combination penicillins (mainly co-amoxiclav) 17.7% and fluoroquinolones 10.8%.
- Overall, 32% of the Scottish population had at least one antibacterial item dispensed in 2011; 8.2% had  $\geq 3$  items and 2.2% had  $\geq 6$  items dispensed. The use of antibacterials increased in all age groups from 2010 to 2011 with the greatest increase in the age groups 0-4 years (4.1%), 5-14 years (5.7%) and  $\geq 80$  years (5.2%).
- Antibacterial use in secondary care (hospitals) is now reported for 10 NHS boards covering 81% of the population. In 2011, the total use of systemic antibacterials in secondary care was 1.7% higher (DDD/1000/day) than in 2010. The use of broad-spectrum antibacterials associated with CDI was 0.4% higher in 2011 in hospitals; which included reductions in cephalosporins (11.2%) and fluoroquinolones (6.0%) and increases in co-amoxiclav (6.7%) and clindamycin (1.7%).
- In 2011, the number of cases of *E. coli* bacteraemia was 3839 which is 10% higher than in 2009. The increase does not seem to have been driven by resistant strains as resistance to key antimicrobials is decreasing; including a decreasing trend in cephalosporin resistance reaching frequencies of 8-9% in 2011, the lowest since 2008.
- The decreasing trends (and stable in some instances) in resistance to key antimicrobials among the Scottish Gram-negative organisms, including *E. coli*, *K. pneumoniae* and *P. aeruginosa* described in this report, should be seen in the light of Europe-wide increases in antimicrobial resistance in Gram-negatives.

- In 2011, extended spectrum beta-lactamase (ESBL) producers among *E. coli* (6.5%) and *K. pneumoniae* (7.0%) were at the lowest frequencies since 2008.
- Among Gram-positive organisms antimicrobial resistance trends are generally stable or decreasing. An exception is the increasing frequency of vancomycin resistance among isolates of *E. faecium* which reached 27.6% in 2011, above what is reported for the UK (8.9%), and only exceeded in Europe by Ireland (34.9%).
- Since 2008 there has been an 18% increase in the use of carbapenems in Scotland despite initiatives to restrict the use of this group of agents. Carbapenem resistance among Gram-negative organisms is still rare, but has now been reported from nearly all parts of Scotland. This highlights the need for measures to preserve the effectiveness of carbapenems for the future.

## Background

Antimicrobial resistance (AMR) is recognised as a major threat to public health and patient safety. It reduces the available treatment options for infection and is associated with increased morbidity (the frequency and severity of illness) and mortality due to a failure of the initial choice of antimicrobial therapy. It is recognised that the way in which antimicrobials are used, sometimes inappropriately, will increase the risk of antimicrobial resistance developing.

SAPG is a national clinical multi-disciplinary forum formed in March 2008 which coordinates and delivers a national framework for antimicrobial stewardship to improve the quality of antimicrobial prescribing and infection management in Scotland.

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## Further Information

Further information can be found in the [Full Publication Report](#) or on the [ISD website](#) or [HPS Website](#)

### About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up. Information Services Division (ISD) is a business operating unit of NHS National Services Scotland - and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government Health Department and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

### Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD.

Further information on ISD's statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the [ISD website](#) [www.isdscotland.org/About-ISD/About-Our-Statistics/](http://www.isdscotland.org/About-ISD/About-Our-Statistics/)