

Information Sheet

Antimicrobial use and appropriateness

- Antimicrobial use is a key factor in the development of antimicrobial resistance, and surveillance of both antimicrobial use and appropriateness of prescribing is essential to inform prevention and containment strategies for antimicrobial resistance
- Inappropriate antimicrobial use includes using antibiotics to treat a viral infection or when they are not required, and prescribing them for longer than necessary

Antimicrobial use in the community

- Between 1 January and 31 December 2015, antibiotic use was high – 45% (n = 10,701,804) of the Australian population was supplied at least one systemic antibiotic through the Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme
- In 2015, 30% of MedicineInsight patients (968,259 out of 3,181,923) were prescribed systemic antibiotics, with women and older people more likely to receive a prescription
- The rate of dispensing in the community increased from 23.8 defined daily doses (DDDs) per 1,000 inhabitants per day in 2014 to 25.4 DDDs per 1,000 inhabitants per day in 2015
- The most commonly dispensed systemic antimicrobials were amoxicillin, cefalexin and amoxicillin–clavulanate
- Around 14% of amoxicillin–clavulanate prescribing was for upper respiratory tract infections, for which antimicrobials are rarely indicated; 15% was for sinusitis, for which antimicrobials are only indicated in specific circumstances
- Only 24% of patients prescribed an antimicrobial had a rationale recorded in their health record
- Of patients who presented to a general practitioner for colds and other upper respiratory tract infections, 60% were prescribed an antimicrobial
- Antimicrobials prescribed were frequently not those recommended by *Therapeutic Guidelines: Antibiotic*
- There are variations in prescribing across states and territories, between major cities and other regions, and across socioeconomic groups; there is currently insufficient evidence to identify the factors that are driving these variations
- Australia's antimicrobial prescribing rate is the eighth highest among member countries of the Organisation for Economic Co-operation and Development, and more than double that of countries that prescribe the lowest volumes



Antimicrobial use in Hospitals

- Antibiotic use in Australian hospitals that participate in the National Antimicrobial Utilisation Surveillance Program (NAUSP) has continued to decline since the peak usage rate in 2010 – there was a 2.1% decrease in 2015 compared with 2014, down from 936 DDDs per 1,000 occupied bed days (OBDs), to 916.4 DDDs per 1,000 OBDs
- The five most commonly used antibiotics in NAUSP contributor hospitals in 2015 were amoxicillin–clavulanate, cefazolin, amoxicillin, flucloxacillin and doxycycline; together, they accounted for 49% of antibacterial use
- The antibiotics classes with the greatest variation between states and territories in NAUSP contributor hospitals are aminoglycosides and the antipseudomonal penicillin combinations; the reasons for the variation need investigation
- In 2015, 21.9% of hospital prescriptions in facilities that participated in the National Antimicrobial Prescribing Survey (NAPS) were assessed as inappropriate, and 23.3% were not compliant with guidelines, compared with 23.0% and 24.3% respectively in 2014
- Almost 40% of cefalexin prescriptions were inappropriate in NAPS contributor hospitals in 2015, which is a concerning continuing high rate of inappropriate prescribing since 2013; most inappropriate use of cefalexin occurs in the context of surgical prophylaxis and pneumonia
- The most common reasons for prescribing antibiotics in NAPS contributor hospitals were surgical prophylaxis (15.5%), community-acquired pneumonia (10.5%), medical prophylaxis (7.6%), sepsis (5.7%) and urinary tract infection (5.0%)
- There was continued improvement in the proportion of surgical prophylaxis prescriptions continuing for more than 24 hours in NAPS contributor hospitals, from 41.8% in 2013 to 27.4% in 2015

Further information

AURA Project:

www.safetyandquality.gov.au/antimicrobial-use-and-resistance-in-australia/

AURA Resources:

www.safetyandquality.gov.au/antimicrobial-use-and-resistance-in-australia/resources-page

Australia's First National Antimicrobial Resistance Strategy:

[www.health.gov.au/internet/main/publishing.nsf/Content/1803C433C71415CACA257C8400121B1F/\\$File/amr-strategy-2015-2019.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/1803C433C71415CACA257C8400121B1F/$File/amr-strategy-2015-2019.pdf)

World Health Organization:

www.who.int/mediacentre/factsheets/fs194/en/

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