

Number of PBS/RPBS prescriptions dispensed for antimicrobials per 100,000 people, 2017-18

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Number of PBS/RPBS prescriptions dispensed for antimicrobials per 100,000 people, 2017-18

Identifying and definitional attributes

Metadata item type:	Indicator
Indicator type:	Indicator
Short name:	Antimicrobial dispensing, 2017-18
METEOR identifier:	723543
Registration status:	Australian Commission on Safety and Quality in Health Care , Standard 22/09/2020
Description:	Number of PBS/RPBS prescriptions dispensed for antimicrobials per 100,000 people, age-sex standardised.
Indicator set:	Australian Atlas of Healthcare Variation: Time Series Australian Commission on Safety and Quality in Health Care , Standard 15/09/2022

Collection and usage attributes

Population group age from:	All ages
Computation description:	Inclusion codes, description and additional requirements

Alimentary tract and metabolism			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
A01AB	AMPHOTERICIN B	02931G, 03306B	03306B is a dental code
	CHLORHEXIDINE	04161B, 04204G	RPBS items. Not included in the specifications used for the Atlas 2015.
	NYSTATIN	10854G	03033P, 03343Y - Delisted after 31 Dec 2015. 10854G (Listed from 1 July 2016 onwards). 03343Y is a dental code.
A02BD	ESOMEPRAZOLE (&) CLARITHROMYCIN (&) AMOXICILLIN	08738X, 10759G	10759G (Listed from 1 May 2016 onwards)

	OMEPRazole (& CLARITHROMYCIN (&) AMOXICILLIN	08272J	Delisted after 31 Aug 2014
A07AA	NYSTATIN	01696G, 01699K, 03342X, 03345C	03342X, 03345C are dental codes
	RIFAXIMIN	10001J	Listed from 1 Dec 2013 onwards
	VANCOMYCIN	03113W, 03114X	

Dermatologicals			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
D01	AMOROLFINE	04010C	RPBS
	CICLOPIROX	04106D	RPBS. Delisted after 31 August 2017
	CLOTRIMAZOLE	04004R	RPBS
	GRISEOFULVIN	01460W, 02982Y	
	KETOCONAZOLE	01574W, 04007X, 09024Y, 09025B	04007X, 04008Y (RPBS). 04008Y (Delisted after 30 Nov 2016).
	MICONAZOLE	03400Y, 04341L, 04454K, 09027D, 09028E, 09029F, 09031H	04341L, 04454K (RPBS. Delisted after 30 Nov 2016)
	NYSTATIN	01698J, 04001N	04001N (RPBS)
	TERBINAFINE	02285G, 02804N, 04011D, 04463X, 04473K, 09160D	04011D, 04463X, 04473K (RPBS)
	TOLNAFTATE	04481W	RPBS

D06AX	MUPIROCIN	04348W, 04350Y	RPBS
D06BA	SILVER SULFADIAZINE	09479X	
D11AX	DAPSONE	01272Y, 08801F	Include 01272Y, 08801F only for extraction

Genitourinary System and Sex Hormones			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
G01AA	NYSTATIN	04013F	RPBS
G01AF	CLOTRIMAZOLE	04016J, 04017K	RPBS

Antiinfectives for systemic use (antibacterials)			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
J01	AMOXICILLIN	01884E, 01886G, 01887H, 01888J, 01889K, 03300Q, 03301R, 03302T, 03310F, 03393N, 05225B, 08581P, 08705E, 09714G	03300Q, 03301R, 03302T, 03310F, 03393N, 05225B are dental codes
	AMOXICILLIN + CLAVULANIC ACID	01891M, 01892N, 05006L, 05008N, 05009P, 05011R, 08254K, 08319W	05006L, 05008N, 05009P, 05011R are dental codes
	AMPICILLIN	02390T, 02977Q, 03313J, 03314K	03313J, 03314K are dental codes

AZITHROMYCIN	04115N, 05616N, 06221K, 08200N, 08201P, 08336R	
BENZATHINE BENZYL PENICILLIN	02267H, 05027N	05027N is a dental code
BENZYL PENICILLIN	01775K, 02647H, 03398W, 03399X, 03486L, 03487M	03398W, 03399X are dental codes. 03486L, 03487M are prescriber bag codes.
CEFACLOR	01169M, 02460L, 02461M, 05045M, 05046N, 05047P	05045M, 05046N, 05047P are dental codes
CEFEPIME	08315P, 08316Q	
CEFOTAXIME	01085D, 01758M, 01759N, 01768C, 01769D, 05049R, 05048Q, 05049R	01768C, 01769D are dental codes. 01085D, 05048Q (delisted after 30 Sep 2017). 01086E, 05049R (delisted after 31 Dec 2015).
CEFTRIAZONE	01783W, 01784X, 01785Y, 01788D, 09058R, 11169W	11169W (Listed from 1 Sep 2017 onwards)
CEFUROXIME	02002J, 05052X, 05499K, 08292K, 11191B, 11192C, 11227X, 11228Y	11191B, 11192C (Listed from 1 Nov 2017 onwards). 11227X, 11228Y (Listed from 1 Feb 2018 onwards). 02002J, 05052X, 11191X, 11228Y are dental codes.

CEFALEXIN	02655R, 03058Y, 03094W, 03095X, 03119E, 03317N, 03318P, 03319Q, 03320R, 10778G	10778G (Listed from 1 Jun 2016 onwards). 03317N, 03318P, 03319Q, 03320R are dental codes.
CEFALOTIN	02964B, 03376Q	03376Q is a dental code
CEFAZOLIN	01256D, 01257E, 01797N, 01799Q, 05477G, 05478H, 05479J, 09326W	
CIPROFLOXACIN	01208N, 01209P, 01210Q	
CLARITHROMYCIN	05624B, 06152T, 08318T, 09192T	05625, 06151R (Delisted after 31 Dec 2015).
CLINDAMYCIN	03138E, 05057E	05057E is a dental code
DICLOXACILLIN	05096F, 05097G, 08121K, 08122L, 10790X	10790X (Listed from 1 Jun 2016 onwards). 05096F, 05097G are dental codes.
DOXYCYCLINE	01800R, 02702F, 02703G, 02707L, 02708M, 02709N, 02711Q, 02714W, 02715X, 03321T, 03322W, 05082L, 09105F, 09106G, 09107H, 09108J, 10176N, 10777F, 10779H, 10781K	10176N (Listed from 1 Dec 2014 onwards) 10777F, 10779H, 10781K (Listed from 1 Jun 2016 onwards). 03321T, 03322W, 05082L are dental codes.

ERYTHROMYCIN	01404X, 03325B 10780J	01397M (Delisted after 30 Nov 2016). 03325B is a dental code. 10780J (Listed from 1 Jun 2016 onwards)
ERYTHROMYCIN ETHYLSUCCINATE	02424N, 02428T, 02750R, 03334L, 03336N, 03337P, 10789W	10789W (Listed from 1 Jun 2016 onwards). 03334L, 03336N, 03337P are dental codes.
FLUCLOXACILLIN	01525G, 01526H, 01527J, 05090X, 05091Y, 05095E, 05257Q, 05258R, 09149M, 09150N, 10605E, 10609J, 10788T	01524F, 05094D (Delisted after 31 Dec 2016). 10605E, 10609J, (Listed from 1 Feb 2016 onwards). 10788T (Listed from 1 Jun 2016 onwards).
FUSIDATE	02312Q, 10782L	10782L (Listed from 1 Jun 2016 onwards)
GENTAMICIN	02824P	
LINCOMYCIN	02530E, 05144R, 11366F, 11380Y	11366F, 11380Y (Listed from 1 Jun 2018 onwards). 05144R, 11366F are dental codes.
METHENAMINE HIPPURATE	03124K	

METRONIDAZOLE	01621H, 01630T, 01636D, 01642K, 01821W, 01832K, 03339R, 03341W, 05155H, 05157K	01638F, 5154G (Delisted after 31 Jul 2014). 02277W, 02298Y (Delisted after 31 Dec 2016). 1821W, 1832K (Delisted after 31 Jan 2018). 03339R, 03341W, 05155H, 0515K are dental codes.
MINOCYCLINE	01616C	
NITROFURANTOIN	01692C, 01693D	
NORFLOXACIN	03010K	
PHENOXYMETHYLPENICILLIN	01703P, 01705R, 01787C, 01789E, 02965C, 03028J, 03360W, 03361X, 03363B, 03364C, 05012T, 05024K, 05029Q, 08976K, 08977L, 09143F	03360W, 03361X, 03363B, 03364C, 05012T, 05024K, 05029Q are dental codes.
PROCAINE PENICILLIN	01794K, 03371K, 03485K	03371K is a dental code. 03485K is a prescriber bag code.
ROXITHROMYCIN	01760P, 05259T, 05260W, 05261X, 08016X, 08129W	05259T, 05260W, 05261X are dental codes.

	TICARCILLIN + CLAVULANIC ACID	10113G, 10125X	02179Q, 05230G (Delisted after 31 Jul 2014). 10113G, 10125X (Listed from 1 Aug 2014 to 31 Jan 2018).
	TINIDAZOLE	01465D	
	TOBRAMYCIN	01356J, 05442K, 08872Y, 09480Y, 10066T, 10074F	
	TRIMETHOPRIM	02666H, 02922T, 10785P	10785P (Listed from 1 Jun 2016 onwards)
	TRIMETHOPRIM + SULFAMETHOXAZOLE	02951H, 03103H, 03390K, 03391L, 10784N	10784N (Listed from 1 Jun 2016 onwards). 03390K, 03391L are dental codes.
	VANCOMYCIN	02269K, 02270L, 03130R, 03131T, 03323X, 05083M	03323X, 05083M are dental codes.
J02	FLUCONAZOLE	01471K, 01472L, 01473M, 01474N, 01475P, 01757L, 05446P, 11139G	11139G (Listed from 1 Jul 2017 onwards).
	ITRACONAZOLE	08196J, 10732W	10732W (Listed from 1 Apr 2016 onwards).
	POSACONAZOLE	09360P, 10460M	10460M (Listed from 1 Sep 2015 onwards).
	VORICONAZOLE	09363T, 09364W, 09452L, 10168E, 10173K, 10198R	10168E, 10173K, 10198R (Listed from 1 Dec 2014 onwards).

J04	ISONIAZID	01554T	Not included in the specifications used for the Atlas 2015
	RIFABUTIN	06195C, 09541E	
	RIFAMPICIN	01981G, 01982H, 01983J, 01984K, 08025J	

Respiratory			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
R01AX06	MUPIROCIN	09440W	

Sensory (Ophthalmologicals & Otologicals)			
Anatomical Therapeutic Chemical (ATC) Code	Description (Drug Name)	PBS code (Item Code)	Comments
S01AA	CHLORAMPHENICOL	01171P, 02360F, 05055C, 05511C, 05512D, 11112W	01171P, 02360F, 05055C, 05511C, 05512D (Delisted after 31 Dec 2015) 11112W (Listed from 1 May 2017 onwards)
	GENTAMICIN	01441W, 05566Y	05566Y is an optometry code
	TOBRAMYCIN	02328M, 02329N, 05569D, 05570E	05569D, 05570D are optometry codes.

S01AE	CIPROFLOXACIN	01217C, 05564W	05564W is an optometry code.
	OFLOXACIN	05567B, 08383F	05567B is an optometry code.
S02AA	CHLORAMPHENICOL		01172Q (Delisted 31 May 2015)
	CIPROFLOXACIN	02480M	
S02CA	FRAMYCETIN SULFATE + GRAMICIDIN + DEXAMETHASONE	02781J	
	TRIAMCINOLONE+ NEOMYCIN SULFATE +GRAMICIDIN+ NYSTATIN	02971J, 02974M	
S03AA	FRAMYCETIN SULFATE	01440T, 05557L	05557L is an optometry code

Persented as the following rates:

- number of prescriptions per 100,000 people
- number of patients per 100,000 people
- number of defined daily doses (DDD) per 1,000 people per day

Rates are directly age-sex standardised, to the 2001 Australian population, using 5-year age groups: 0-4, 5-9, ... , 80-84, 85 and over.

For more information about age-standardisation in general see Glossary item [Age-standardised rate](#).

A patient's age is calculated in years as the difference between the patient's date of birth and date of supply for the prescription. Date of birth and sex are as reported on a patient's last prescription for any drug, extracted on 24/10/2019.

Prescriptions are allocated to a financial year based on the date the medicine was supplied to the patient. For example for 2017–18, the date of supply is between 1 July 2017 and 30 June 2018.

Analysis by Statistical Area Level 3 (SA3) 2016 is based on the patient's enrolment postcode as last reported by the patient to Medicare, valid at date of supply.

Suppress data (number and rate) if at least one of the following conditions are met:

- the total denominator is less than 1,000
- the total numerator is less than 20.

Age-sex standardised rates are also suppressed where the denominator for at least one of the age-sex groups used to calculate the rate is below 30 and results of sensitivity analysis indicate that the rates are volatile. However, for SA3 data, if the volatility of the rate is not found to have a material impact on its decile, the rate is published with caution. For more information about the sensitivity analysis, see the

Computation:

(a), (b) $[\text{Numerator} \div \text{Denominator}] \times 100,000$

(c) $([\text{Numerator} \times 1,000] \div [\text{Denominator} \times 365])$

Numerator:

For 2017-18:

1. Number of antimicrobial prescriptions dispensed
2. Number of patients dispensed at least one antimicrobial prescription
3. Number of DDD of antimicrobial medicines dispensed [mass amount x quantity dispensed \div DDD amount]

Numerator data elements:

Data Element / Data Set

Data Element

Data Element / Data Set:

Defined daily dose amount, N(3.3)

Data Source:

WHO Collaborating Centre for Drug Statistics Methodology

Data Element / Data Set

Data Element

Pharmaceutical Benefits Scheme (PBS) prescription—mass amount, N(14.5)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

Data Element

Pharmaceutical Benefits Scheme (PBS) prescription—Anatomical Therapeutic Chemical (ATC) code, ANN(AANN)

Data Source

[Pharmaceutical Benefits Scheme \(PBS\) data](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Person—date of birth, DDMMYYYY](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Pharmaceutical Benefits Scheme \(PBS\) prescription—PBS item prescribed, code NN\[NNN\]A](#)

Data Source

[Repatriation Pharmaceutical Benefits Scheme \(RPBS\) data](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Pharmaceutical Benefits Scheme \(PBS\) prescription—patient identifier, identifier N\(9\)](#)

Data Source

[Pharmaceutical Benefits Scheme \(PBS\) data](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Pharmaceutical Benefits Scheme \(PBS\) prescription—quantity of PBS item supplied, total number N\[NNN\]](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Person—sex, code A](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Data Element / Data Set

[Pharmaceutical Benefits Scheme \(PBS\) prescription—date of supply, DDMMYYYY](#)

Guide for use

PBS and RPBS data 2017-18 extracted on 24/10/2019.

Data source type: Administrative by-product data

Denominator:

As at 30 June 2017:

(a), (b), (c) Total population

Denominator data elements:

Data Element / Data Set

Data Source

[ABS Regional Population by Age and Sex, Australia](#)

Guide for use

Data source type: Census based plus administrative by-product data

Data Element / Data Set

[Person—estimated resident population of Australia, total people N\[N\(7\)\]](#)

Data Source

[ABS Australian Demographic Statistics](#)

Disaggregation:

(a) SA3 2016 by:

- remoteness (ASGS Remoteness structure 2016) and Socio-Economic Indexes for Areas (SEIFA 2016) Index of Relative Socioeconomic Disadvantage (IRSD 2016)

Primary Health Network (PHN) 2017

State and territory

(b) State and territory

(c) State and territory

Disaggregation data elements:

Data Element / Data Set

Data Element

Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS) Pharmacy claim script detail

Guide for use

GPO postcodes 2001, 2124, 3001, 4001, 5001, 6843 excluded from the SA3 and PHN level analysis but included in state/territory and national level analysis.

Data source type: Administrative by-product data

Used for disaggregation by Statistical Area Level 3.

Data Element / Data Set

[Address—statistical area, level 3 \(SA3\) code \(ASGS 2011\) NNNNN](#)

Data Element / Data Set

[Address—Australian postcode, code \(Postcode datafile\) NNNN](#)

Representational attributes

Representation class:

Rate

Data type:

Integer

Unit of measure:

Service event

Format: a) Prescription event b) Person c) Defined Daily Dose
NN[NNNN]

Data source attributes

Data sources:

Data Source

[ABS Regional Population by Age and Sex, Australia](#)

Frequency

Annually

Data custodian

Australian Bureau of Statistics

Data Source

[ABS Australian Demographic Statistics](#)

Frequency

Quarterly

Data custodian

Australian Bureau of Statistics

Data Source

[Pharmaceutical Benefits Scheme \(PBS\) data](#)

Frequency

Daily

Data custodian

Australian Government Department of Health

Data Source

[Repatriation Pharmaceutical Benefits Scheme \(RPBS\) data](#)

Frequency

Daily

Data custodian

Australian Government Department of Health

Accountability attributes

Methodology:

Statistical Area Level 3 (SA3s) are geographic areas defined in the ABS Australian Statistical Geography Standard (ASGS). The aim of SA3s is to create a standard framework for the analysis of ABS data at the regional level through clustering groups of SA2s that have similar regional characteristics. There are 340 spatial SA3s covering the whole of Australia without gaps or overlaps. They are designed to provide a regional breakdown of Australia. SA3s generally have a population of between 30,000 and 130,000 people. There are approximately 78 with fewer than 30,000 people and 46 with more than 130,000 as at 30 June 2016. The Other Territories of Jervis Bay, Cocos (Keeling) Islands, Christmas Island and Norfolk Island are each represented by a SA3 in the 2016 ASGS. For further information see the ABS publication, Population by Age and Sex, Regions of Australia, 2016. ABS. cat. no. 3235.0.

The Anatomical Therapeutic Chemical (ATC) code is recommended by the World Health Organization (WHO) as an internationally accepted classification for presenting and comparing drug usage data. Since 1982, the WHO Collaborating Centre for Drug Statistics Methodology (WHOC), located in Norway, has been the central body responsible for coordinating ATC use. Note that the ATC codes used in this specification are from the Australian Department of Health's version of the WHO ATC classifications, which have some minor differences from the WHO version, based upon a particular drug's usage in Australia. The Department of Health's ATC version is available at <http://www.pbs.gov.au/browse/body-system>

Further information on DDD/1,000/day is available at http://www.who.int/medicines/regulation/medicines-safety/toolkit_indicators/en/index1.html.

DDD amounts are available at https://www.whocc.no/atc_ddd_index/

Reporting requirements:

Australian Commission on Safety and Quality in Health Care

Australian Atlas of Healthcare Variation 2020

Organisation responsible for providing data:

Australian Institute of Health and Welfare

Accountability:

Australian Commission on Safety and Quality in Health Care

Release date:

14/10/2020

Source and reference attributes**Submitting organisation:**

Australian Commission on Safety and Quality in Health Care

Relational attributes**Related metadata references:**

See also [ABS Estimated resident population \(total population\). QS Health](#), Standard 08/06/2011

See also [Australian Atlas of Healthcare Variation 2018: Number of PBS/RPBS prescriptions dispensed for antimicrobials per 100,000 people, 2013-14, 2014-15, 2015-16 and 2016-17](#)

[Australian Commission on Safety and Quality in Health Care](#), Standard 13/12/2018