

**Australian Government**

**Department of Health  
and Aged Care**

# **Infections and antimicrobial prescribing in Australian residential aged care facilities**

Results of the 2022 Aged  
Care National Antimicrobial  
Prescribing Survey

2022



**NCAS**  
National Centre for  
Antimicrobial Stewardship

**AGED CARE**  
**INAPS** National Antimicrobial  
Prescribing Survey

**ICNISS**  
HEALTHCARE ASSOCIATED INFECTION SURVEILLANCE

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# Preface

This report is best interpreted when read in conjunction with the National Antimicrobial Prescribing Survey Technical Supplement 2022.

## Acknowledgements

### Contributing facilities

On behalf of the National Centre for Antimicrobial Stewardship (NCAS), Royal Melbourne Hospital (RMH) Guidance Group and the Victorian Healthcare Associated Infection Surveillance System (VICNISS) Co-ordinating Centre, we would like to thank all contributing residential aged care facilities and auditors for their time and effort in collecting and entering the data, in contributing data to this report and to the Antimicrobial Use and Resistance in Australia (AURA) Surveillance System, and for their continued commitment to improving safety and quality across the Australian healthcare system.

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# Abbreviations

Abbreviation	Definition
Aged Care NAPS	Aged Care National Antimicrobial Prescribing Survey
AMS	Antimicrobial stewardship
AURA	Antimicrobial Use and Resistance in Australia
IPC	Infection prevention and control
NAPS	National Antimicrobial Prescribing Survey
NCAS	National Centre for Antimicrobial Stewardship
PRN	Pro re nata
RACF	Residential aged care facility
RMH	Royal Melbourne Hospital
VICNISS	Victorian Healthcare Associated Infection Surveillance System

# Summary

The Aged Care National Antimicrobial Prescribing Survey (Aged Care NAPS) continues to play a pivotal role in Australian residential aged care facilities (RACFs) as part of their infection prevention and control (IPC) and antimicrobial stewardship (AMS) programs. The Aged Care NAPS is a standardised tool that can be used to monitor the prevalence of infections and antimicrobial use, provide feedback to key clinicians and administrators and measure the effectiveness of IPC and AMS initiatives.

A total of 743 RACFs participated in 2022, an increased number from 2021 (n=690). The ongoing large number of Aged Care NAPS contributors indicates that Australian RACFs value the opportunity to participate in this point prevalence survey. All provider states and territories (except the Northern Territory), remoteness areas and provider groups (government, not-for-profit and private) were represented.

## Key results

- On the survey day, the prevalence of residents who had signs and/or symptoms of at least one suspected infection was 3.0%; the prevalence of residents prescribed at least one antimicrobial (current/active medication order) was 12.5%.
- On the survey day, suspected skin or soft tissue (45.7%), urinary tract (21.8%) and respiratory tract (20.3%) infections continued to be the most commonly reported; only 32.8% met surveillance definitions for confirmed infections.
- Clotrimazole (21.7%) and cefalexin (19.5%) continued to be the most commonly prescribed antimicrobials; molnupiravir (5.5%), an antiviral agent provisionally approved in Australia for treatment of mild to moderate COVID-19 in January 2022, was reported for the first time in this year's Aged Care NAPS.
- Documentation of indication for an antimicrobial prescription remained constant compared with 2021 (78.4%).
- The most common indication (therapeutic or prophylactic) for prescribing antimicrobials was 'other skin, soft tissue or mucosal infection' (22.1%) – that is, all skin, soft tissue or mucosal infections not specifically listed as an Aged Care NAPS indication.
- Documentation of review or stop date for an antimicrobial prescription slightly improved (55.4%) compared with 2021 but still remains well below the expected best practice target of 95%.
- For those antimicrobials still prescribed on the survey day, over one-third (37.6%) were commenced >6 months prior.
- A microbiology specimen was collected for less than one-quarter (22.6%) of antimicrobial prescriptions where the start date was known and ≤6 months prior to the survey date.

## Recommendations

The Aged Care NAPS key results again demonstrate that there are significant opportunities for improvement.

Recommendations for those working at a local or national level include:

- advocating that all Australian RACFs participate in the Aged Care NAPS
- continuing training and helpdesk support to participating RACF staff to ensure accurate Aged Care NAPS data collection and submission
- sharing Aged Care NAPS results with administrators and clinicians such as general practitioners, pharmacists and nurses, and using these results to develop targeted IPC and AMS improvement strategies
- enhancing the level of IPC training among RACF staff, focusing on evidence-based strategies that prevent and control common infections such as skin or soft tissue, urinary tract and respiratory infections
- tailoring RACF AMS programs to improve antimicrobial prescribing. This could include, for example, ensuring the documentation of key prescribing elements (including indication and review or stop date for an antimicrobial prescription), rationalising antimicrobial prescriptions for prophylactic use and promoting appropriate microbiological sampling.

# 1. Introduction

This report presents analyses of data collected for the 2022 Aged Care National Antimicrobial Prescribing Survey (Aged Care NAPS) and includes comparisons with previous annual (2016 to 2021) Aged Care NAPS data. It supersedes all previous Aged Care NAPS reports.<sup>1-6</sup> Data for 2016 to 2021 included in the analyses for this report differ from data in previous reports; some data were retrospectively entered and an extensive data cleaning process was undertaken before commencing the 2022 analysis.<sup>7</sup>

Monitoring of infections and antimicrobial use in residential aged care facilities (RACFs) is an important safety and quality activity as there is longstanding evidence of residents being colonised or infected by multidrug-resistant organisms and of inappropriate antimicrobial use.

The Aged Care NAPS, first piloted in 2015, was modelled on the European Centre for Disease Prevention and Control Healthcare-Associated Infection in Long-Term Care Facilities (HALT) study.<sup>8</sup> The Aged Care NAPS has subsequently been conducted annually. Coordination of the Aged Care NAPS is overseen by the National Centre for Antimicrobial Stewardship (NCAS), the Royal Melbourne Hospital (RMH) Guidance Group and the Victorian Healthcare Associated Infection Surveillance System (VICNISS) Coordinating Centre. In 2022, funding was provided by the Australian Government Department of Health and Aged Care. Aged Care NAPS data are included in Antimicrobial Use and Resistance in Australia (AURA) Surveillance System reports;<sup>9</sup> AURA is a comprehensive and coordinated national surveillance system of antimicrobial use and antimicrobial resistance in human health.<sup>10</sup>

The Aged Care NAPS is a standardised surveillance tool that all Australian residential aged care facilities (RACFs) – that is, aged care homes and multipurpose services – can use to monitor the prevalence of infections and antimicrobial use, provide feedback to key clinicians and administrators, and measure the effectiveness of infection prevention and control (IPC) and antimicrobial stewardship (AMS) programs.<sup>11-13</sup> It is recommended that RACFs participate at least once on their nominated single ‘survey day’ during the official time frame; each year since 2020 the official time frame has been from June to December. Participation assists facilities to demonstrate that they meet the action requirements of the Aged Care Quality Standards. Standard 3(3)(g) specifically aims to minimise infection-related risks by implementing standard and transmission-based precautions and practices to promote appropriate antimicrobial use. Standard 8(3)(e) notes that where clinical care is provided a clinical governance framework must include AMS.<sup>11</sup>

For details on the Aged Care NAPS methodology (methods 1 and 2), 2 data collection forms (Facility data collection form and Antimicrobial and infection data collection form), analyses and considerations for data interpretation, please refer to the National Antimicrobial Prescribing Survey Technical Supplement 2022.<sup>7</sup>



## 2. Results

### 2.1 Participation

In 2021, 690 RACFs collected and submitted Aged Care NAPS data at least once during the official time frame. In 2022, an increased number of RACFs (743 RACFs, comprising 665 aged care homes and 78 multipurpose services) similarly collected and submitted Aged Care NAPS data. Twenty-five facilities participated more than once. Since 2020, 428 facilities have participated at least once each year during the official data collection period (Table 1).

Most participating facilities were located in Victoria (36.2%) or New South Wales (21.4%). About half (52.5%) were located in major cities. About half (49.3%) were operated by not-for-profit providers (Table 1).

Participation of eligible RACFs within different states/territories, remoteness areas and provider groups varied from 0% in the Northern Territory (where there were only 10 eligible RACFs) to 47.7% in Western Australia, from 23.5% in major cities to 32.8% in outer regional areas, and from 15.5% of private RACFs to 58.2% of government RACFs (Table 1).

See Figure 1 and [Table A1](#) for annual participation data from 2016 to 2021.

**Table 1: Facilities by state, remoteness area classification and provider type, Aged Care NAPS contributors, 2022**

Category		Residents audited	Participating facilities		Facilities in reporting group	Participating facilities in reporting group
		n	%	n	%	%
State or territory	ACT	973	9	1.2	26	34.6
	NSW	10,414	159	21.4	912	17.4
	NT	0	0	0.0	10	0.0
	QLD	6,784	95	12.8	497	19.1
	SA	3,917	63	8.5	259	24.3
	TAS	1,007	14	1.9	69	20.3
	VIC	13,215	269	36.2	761	35.3
Remoteness*	WA	7,383	134	18.0	281	47.7
	Major cities	29,634	390	52.5	1,661	23.5
	Inner regional	9,991	199	26.8	669	29.7
	Outer regional	3,701	125	16.8	381	32.8
	Remote	187	19	2.6	67	28.4
Provider type	Very remote	180	10	1.3	37	27.0
	Government	5,537	233	31.4	400	58.2
	Not-for-profit	26,965	366	49.3	1,488	24.6
	Private	11,191	144	19.4	927	15.5
<b>Total</b>		<b>43,693</b>	<b>743</b>	<b>100</b>	<b>2,815</b>	<b>26.4</b>

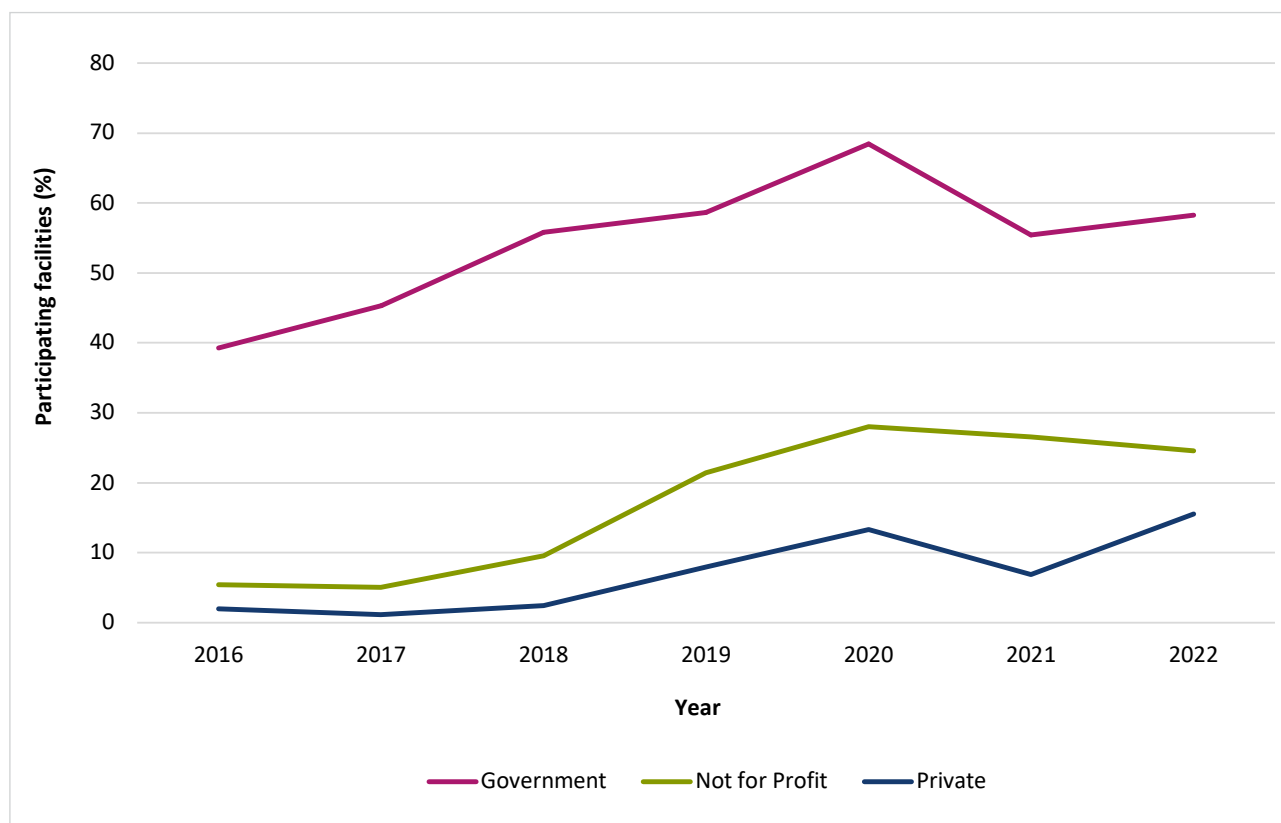
Sources: 1. Facility data collection form and 2. Aged care service list: 30 June 2022, Australian Institute of Health and Welfare (AIHW) GEN Aged Care Data.

\* Remoteness category as per the Australian Bureau of Statistics.<sup>14</sup>

See Figure 1 for graphical presentation of provider type.

Transition care, innovative pool, national Aboriginal and Torres Strait Islander and short-term restorative care services are excluded.

**Figure 1: Percentage of participating facilities within different provider types, Aged Care NAPS contributors, 2016–2022**



Sources: 1. Facility data collection form and 2. Aged care service list: 30 June 2016 to 2022, AIHW GEN Aged Care Data.

In 2022, over half (58.3%) of the residents were aged >85 years and about one-third (33.8%) were male on the survey day (Table 2).

**Table 2: Number and characteristics of all residents on the survey day, Aged Care NAPS contributors, 2022**

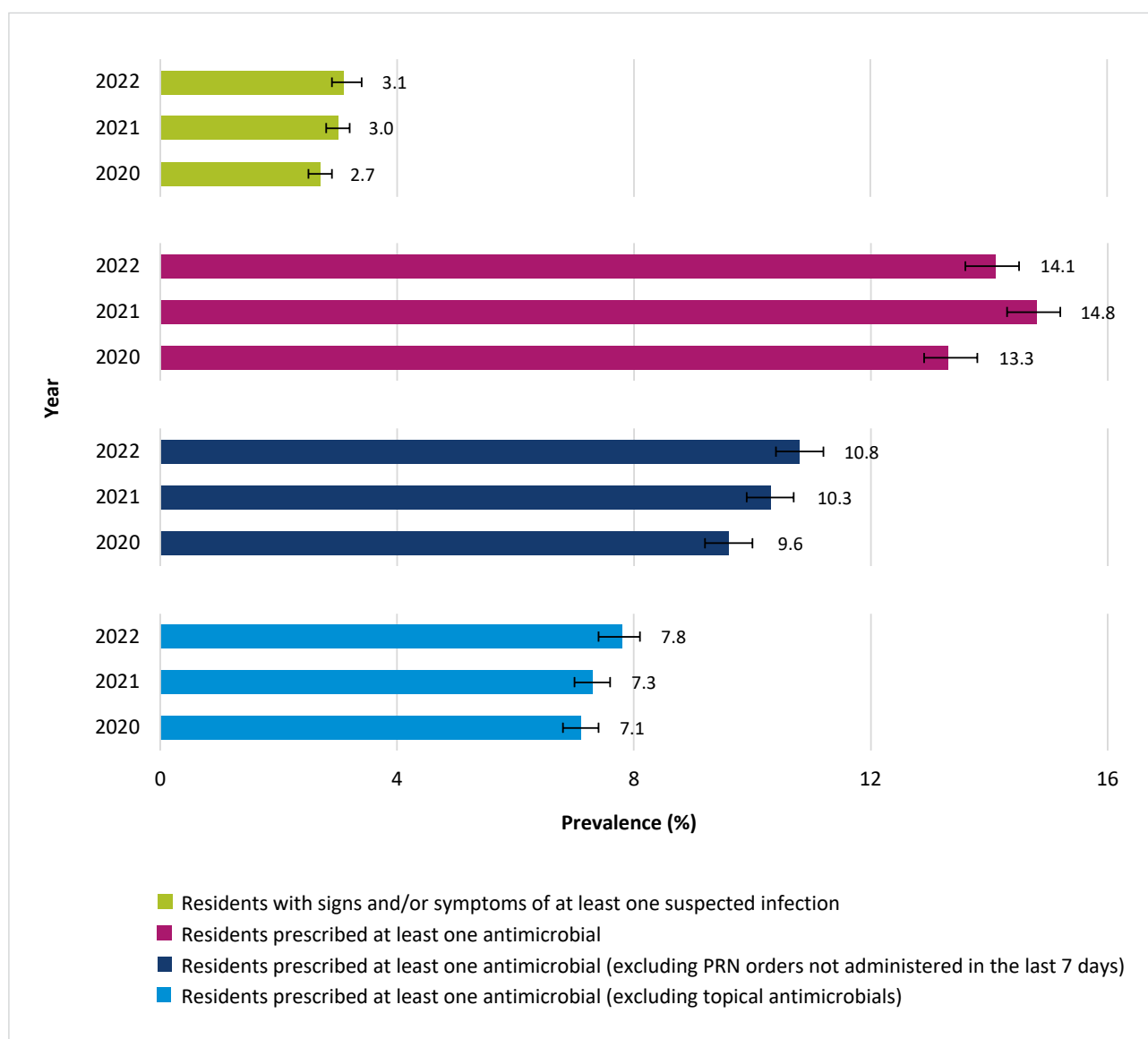
Measurement	2022	
	n	%
Present on survey day	43,693	–
Aged >85 years	25,483	58.3
Male	14,787	33.8
Admitted to hospital in previous 7 days	667	1.5
Indwelling urinary catheter present	1,525	3.5

## 2.2 Prevalence of infections and antimicrobial use

On the survey day in 2022, the prevalence of residents who had signs and/or symptoms of at least one suspected infection was 3.0% (n=1,293). The prevalence of residents prescribed at least one antimicrobial (current/active medication order) was 12.5% (n=5,441). If all topical antimicrobials or if all pro re nata (PRN) orders not administered in the previous 7 days were excluded, the prevalence of residents prescribed at least one antimicrobial on the survey day was 6.9% and 9.6% respectively (Table A2).

The same prevalence measurements for those RACFs that have participated each year since 2020 are presented in Figure 2 and Table A3.

**Figure 2: Prevalence of suspected infections and antimicrobial use on the survey day, Aged Care NAPS contributors that have participated each year 2020–2022 (n=428)**



Sources: 1. Facility data collection form and 2: Antimicrobial and infection data collection form.

## 2.3 Suspected infections on the survey day

Older people are especially vulnerable to infections and may not have typical signs and symptoms of infection. In 2022, a total of 1,293 residents were reported to have a total of 1,391 suspected infections on the survey day. Suspected skin or soft tissue (45.8%), urinary tract (21.8%) and respiratory tract (20.3%) infections were most commonly reported (Table 3). Only 32.8% met the McGeer et al. infection surveillance definitions<sup>15</sup> specifically for use in RACFs; these definitions have been designed to increase the likelihood that events captured are confirmed infections.

**Table 3: Number and percentage of suspected infections by body system, Aged Care NAPS contributors, 2022**

Body system	Suspected infections		RACF associated suspected infections*	
	n	%	n	%
Skin or soft tissue	637	45.8	628	45.6
Respiratory tract	282	20.3	280	20.3
Urinary tract	303	21.8	301	21.9
Eye	78	5.6	77	5.6
Oral	34	2.4	33	2.4
Other systems	58	4.2	57	4.1
<b>Total</b>	<b>1,392</b>	<b>100</b>	<b>1,376</b>	<b>100</b>

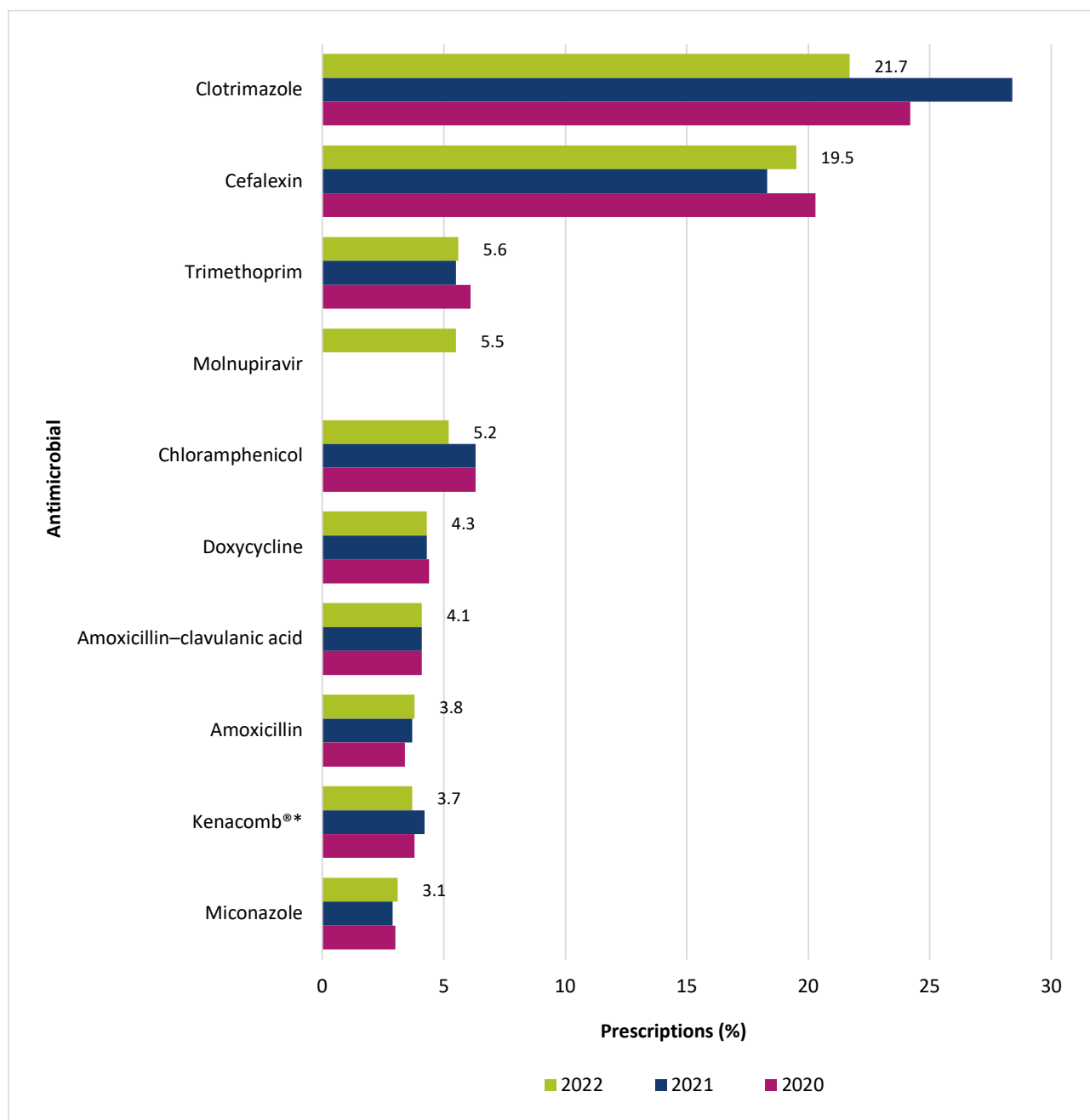
Source: Antimicrobial and infection data collection form Section 5, Method 1 data.

\* RACF associated suspected infection = infection that developed in resident 48 hours post (re)admission.

## 2.4 Most commonly prescribed antimicrobials

Most antimicrobials were prescribed for oral (58.6%) or topical (40.3%) administration. About one-fifth (19.0%) of prescriptions were for prophylactic use. As in previous surveys, clotrimazole (21.7%) and cefalexin (19.5%) were the most frequently prescribed antimicrobials. Notably, prescribing of molnupiravir (5.5%), an antiviral agent provisionally approved in Australia for treatment of mild to moderate COVID-19 in January 2022, was reported for the first time in the 2022 NAPS (Figure 3, [Table A4](#)).

**Figure 3: Most commonly prescribed antimicrobials, Aged Care NAPS contributors, 2020–2022**



Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.  
 Only the top 10 antimicrobials prescribed are listed (methenamine hippurate, an antibacterial *antiseptic*, was excluded).  
 \* Kenacomb® contains triamcinolone, neomycin, nystatin and gramicidin.

Clotrimazole (92.9%) and cefalexin (64.9%) were mostly prescribed for therapeutic indications (Table 4).

**Table 4: Clotrimazole and cefalexin prescriptions, therapeutic and prophylactic use, Aged Care NAPS contributors, 2022**

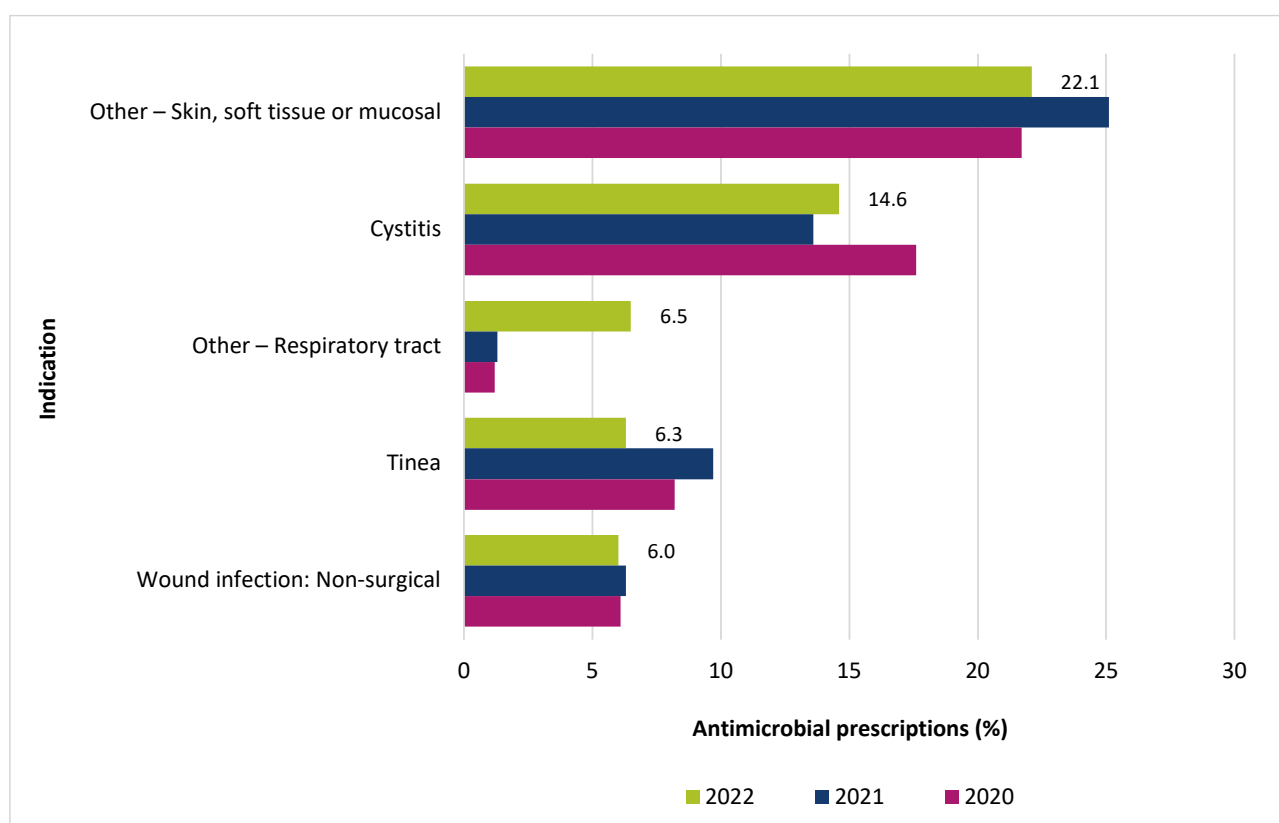
Antimicrobial	Category	n	%	% of total prescriptions (n=8,373)
Clotrimazole (n=1,819)	Therapeutic	1,690	92.9	20.2
	Prophylactic	129	7.1	1.5
Cefalexin (n=1,636)	Therapeutic	1,062	64.9	12.7
	Prophylactic	574	35.1	6.9

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

## 2.5 Common indications for prescribing antimicrobials

The most commonly reported indications for antimicrobial prescriptions (therapeutic and prophylactic) was ‘other – skin, soft tissue or mucosal’ (22.1%) (Figure 4, Table A5). The most commonly reported indication for prophylactically prescribing antimicrobials was ‘cystitis’ (24.3%) (Figure 5, Tables A6 and A7).

**Figure 4: Most common indications for all antimicrobial prescriptions, Aged Care NAPS contributors, 2020–2022**

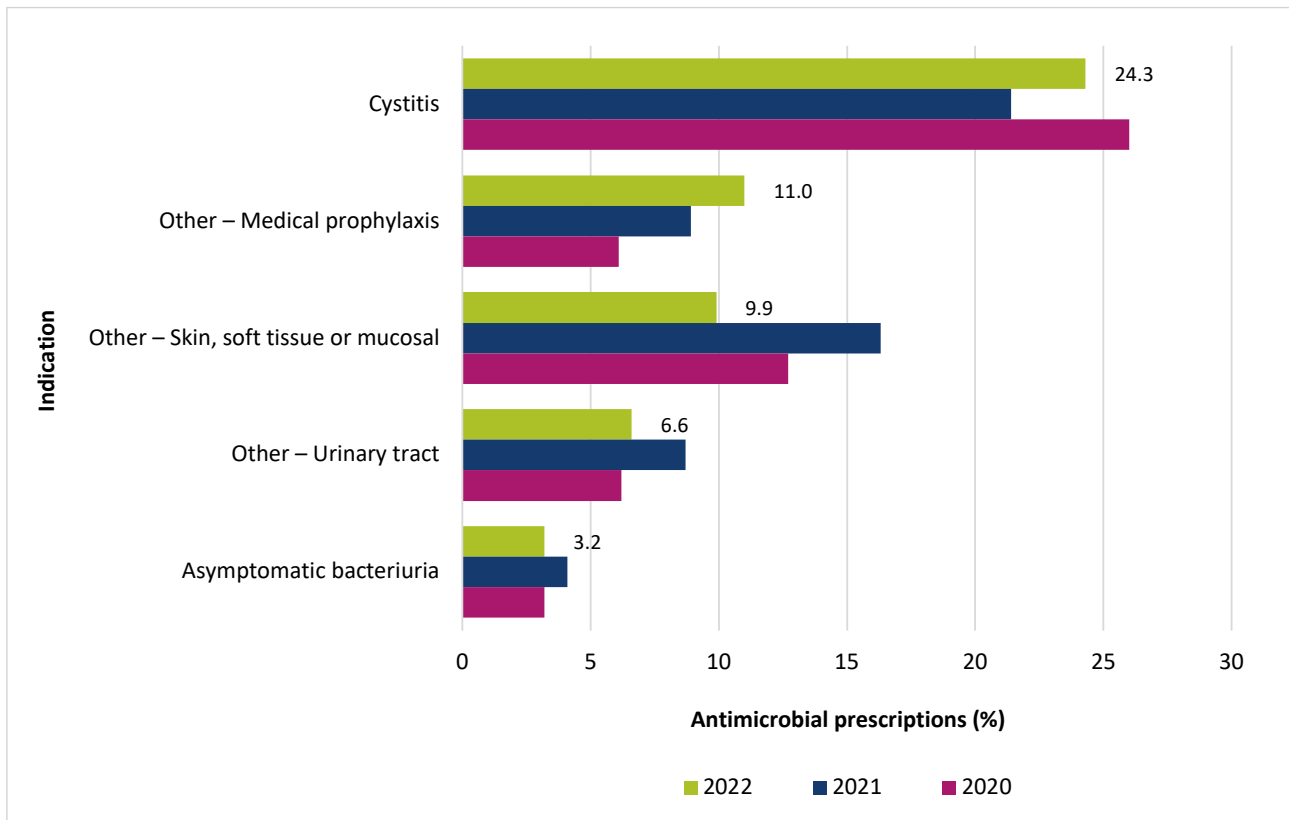


Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

See Table A5 for tabular presentation of data.

Only the top 5 indications for antimicrobial prescriptions are listed.

**Figure 5: Most common indications for prophylactic antimicrobial prescriptions, Aged Care NAPS contributors, 2020–2022**



Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

See [Table A6](#) for tabular presentation of data.

Only the top 5 indications for prophylactic antimicrobial prescriptions are listed.

## 2.6 Most commonly prescribed antimicrobials for common indications

The most commonly prescribed antimicrobials for cystitis, tinea and wound infection (non-surgical) (the top 3 specific indications) were cefalexin (48.4%), clotrimazole (69.2%) and cefalexin (33.9%) respectively (Table 5).

**Table 5: Commonly prescribed antimicrobials for cystitis, tinea and wound infection (non-surgical), Aged Care NAPS contributors, 2022**

Cystitis (n=1,224)			Tinea (n=529)			Wound infection: non-surgical (n=505)		
Antimicrobial	n	%	Antimicrobial	n	%	Antimicrobial	n	%
Cefalexin	592	48.4	Clotrimazole	366	69.2	Cefalexin	171	33.9
Trimethoprim	339	27.7	Miconazole	96	18.1	Mupirocin	76	15.0
Nitrofurantoin	103	8.4	Terbinafine	26	4.9	Flucloxacillin	61	12.1
Amoxicillin–clavulanic acid	56	4.6	Ketoconazole	12	2.3	Kenacomb®	26	5.1
Amoxicillin	40	3.3	Kenacomb®	10	1.9	Clindamycin	25	5.0

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

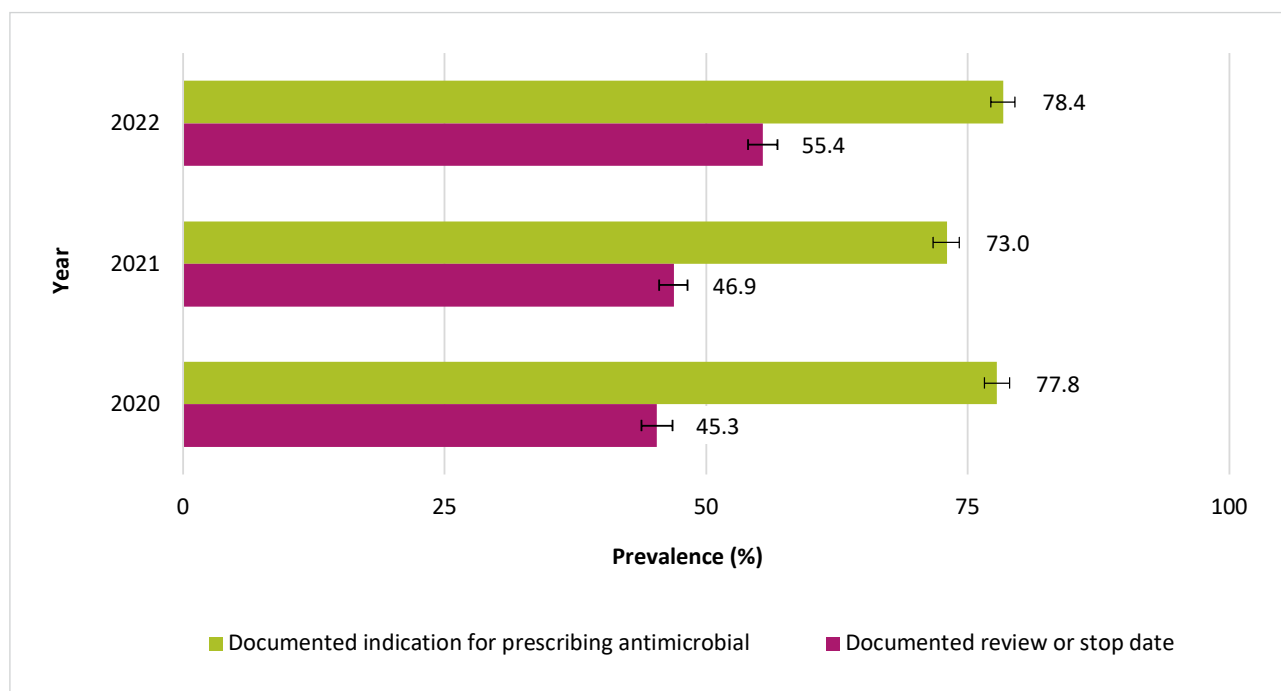
## 2.7 Quality indicators

Complete and accurate documentation ensures that all those involved in resident care have access to consistent and current information. When, for example, a resident is prescribed an antimicrobial, the indication, active ingredient, dose, frequency and route of administration, and the intended duration or review plan should be documented in their healthcare record. Where electronic healthcare records are being used, flags and reminders in the record management system can be incorporated to support documentation in all relevant fields.<sup>16</sup>

For facilities that have participated each year since 2020, in 2022 compared with previous years there was an increase in the percentage of antimicrobial prescriptions that had a documented indication for prescribing an antimicrobial (78.4%) and a documented review or stop date (55.4%) (Figure 6, [Table A8](#), [Table A9](#)).



**Figure 6: Key quality indicators, Aged Care NAPS contributors that have participated each year 2020–2022 (n=428)**



Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

## 2.8 Duration

In general, the shortest possible duration of therapy, consistent with the condition being treated and the resident’s clinical response, should be used. Prolonged duration of antimicrobial therapy is associated with an increased risk of adverse outcomes including antimicrobial resistance.<sup>17</sup>

In 2022, for antimicrobials still prescribed on the survey day, the start date was unknown for 1.8% of prescriptions, and 37.6% of prescriptions had commenced >6 months prior to the survey day. The most common antimicrobials in this category were clotrimazole (37.3%), cefalexin (14.5%) and Kenacomb® (gramicidin–neomycin–nystatin–triamcinolone) (6.2%). For antimicrobials still prescribed on the survey day, with a known start date and prescribed ≤6 months prior to the survey day, 31.5% had commenced >7 days prior to the survey day.

## 2.9 Microbiology

For antimicrobials still prescribed on the survey day, with a known start date and prescribed  $\leq 6$  months prior to the survey day, a microbiology specimen was collected for less than one-quarter (22.6%) of prescriptions (Table 6). For one prescription, more than one specimen type could be taken.

**Table 6: Microbiology specimen collection, Aged Care NAPS contributors, 2022**

Specimen type	n	%
Urine	843	44.6
Skin / wound swab	308	16.3
Respiratory swab	591	31.3
Sputum	39	2.1
Other	110	5.8
<b>Total</b>	<b>1,891</b>	<b>100</b>

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

### 3. Conclusion

Now in its seventh year, the Aged Care NAPS continues to play a pivotal role in RACFs as part of their IPC and AMS programs. This year's key results again demonstrate that there are significant opportunities for improvement. Updated priorities for those working in the sector at a local or national level include (at least):

- advocating that all Australian RACFs participate in the Aged Care NAPS
- continuing training and helpdesk support for participating RACF staff to ensure accurate Aged Care NAPS data collection and submission
- sharing Aged Care NAPS results with administrators and clinicians such as general practitioners, pharmacists, nurses and aged care IPC leads, and using these results to develop targeted IPC and AMS improvement strategies
- enhancing the level of IPC training among RACF staff, focusing on evidence-based strategies that prevent and control common infections such as skin or soft tissue, urinary tract and respiratory infections
- tailoring RACF AMS programs to improve antimicrobial prescribing. This could include, for example, ensuring the documentation of key prescribing elements (indication and review or stop included), rationalising antimicrobial prescriptions for prophylactic use, and promoting appropriate microbiological sampling.

# Appendix

**Table A1: Participation of eligible facilities within state and territory and provider groups, Aged Care NAPS contributors, 2016–2021**

Category	2016			2017			2018			2019			2020			2021		
	PF (n)	No. of facilities in RG	% of PF in the RG	PF (n)	No. of facilities in RG	% of PF in the RG	PF (n)	No. of facilities in RG	% of PF in the RG	PF (n)	No. of facilities in RG	% of PF in the RG	PF (n)	No. of facilities in RG	% of PF in the RG	PF (n)	No. of facilities in RG	% of PF in the RG
ACT	0	25	0.0	0	25	0.0	4	25	16.0	6	24	25.0	6	24	25.0	8	25	32.0
NSW	32	927	3.5	37	936	4.0	63	939	6.7	137	936	14.6	171	939	18.2	136	928	14.7
NT	0	10	0.0	0	10	0.0	2	10	20.0	1	10	10.0	1	10	10.0	0	10	0.0
QLD	28	467	6.0	19	471	4.0	49	475	10.3	84	489	17.2	102	496	20.6	97	501	19.4
SA	7	274	2.6	8	268	3.0	35	268	13.1	66	270	24.4	89	267	33.3	88	262	33.6
TAS	10	73	13.7	6	73	8.2	6	72	8.3	28	71	39.4	31	71	43.7	26	69	37.7
VIC	174	759	22.9	184	765	24.1	203	769	26.4	229	776	29.5	296	774	38.2	240	765	31.4
WA	14	274	5.1	22	269	8.2	36	276	13.0	90	281	32.0	135	282	47.9	95	285	33.3
Government	165	420	39.3	189	417	45.3	231	414	55.8	241	411	58.6	280	409	68.5	225	406	55.4
Not-for-profit	83	1,529	5.4	77	1,523	5.1	145	1,517	9.6	327	1,527	21.4	427	1,522	28.1	401	1,509	26.6
Private	17	860	2.0	10	877	1.1	22	903	2.4	73	919	7.9	124	932	13.3	64	930	6.9
<b>Total</b>	<b>265</b>	<b>2,809</b>	<b>9.4</b>	<b>276</b>	<b>2,817</b>	<b>9.8</b>	<b>398</b>	<b>2,834</b>	<b>14.0</b>	<b>641</b>	<b>2,857</b>	<b>22.4</b>	<b>831</b>	<b>2,863</b>	<b>29.0</b>	<b>690</b>	<b>2,845</b>	<b>24.3</b>

Sources: 1. Facility data collection form and 2. Aged care service list: 30 June 2016 to 2022, AIHW GEN Aged Care Data.

PF= participating facilities; RG = reporting group.

See Table 1 for 2022 data.

**Table A2: Prevalence of suspected infections and antimicrobial use on the survey day, Aged Care NAPS contributors, 2016–2022**

On survey day	2016		2017		2018		2019		2020		2021		2022	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Residents with signs and/or symptoms of at least one suspected infection*	385	3.0	338	2.9	562	2.9	984	2.8	1,383	2.9	1,248	3.1	1,293	3.0
Residents with signs and/or symptoms of at least one residential aged care facility associated suspected infection*	-	-	-	-	-	-	-	-	-	-	1,222	3.0	1,277	2.9
Residents prescribed at least one antimicrobial	1,214	9.6	1,050	9.0	1,914	9.9	3,503	9.9	5,625	11.8	5,561	13.7	5,441	12.5
Residents prescribed at least one antimicrobial (excluding PRN orders not administered in the previous 7 days)	1,214	9.6	1,049	9.0	1,626	8.4	2,932	8.3	4,148	8.7	3,923	9.7	4,201	9.6
Residents prescribed at least one antimicrobial (excluding topical antimicrobials)	870	6.9	723	6.2	1,264	6.5	2,208	6.2	3,066	6.4	2,733	6.7	3,003	6.9
Number of residents present	12,693	-	11,652	-	19,423	-	35,354	-	47,647	-	40,511	-	43,693	-

Sources: 1. Facility data collection form and 2. Antimicrobial and infection data collection form.

\* See Technical Supplement for definition of (residential aged care facility associated) suspected infection.<sup>7</sup>

PRN = pro re nata.

**Table A3: Prevalence of suspected infections and antimicrobial use on the survey day, Aged Care NAPS contributors that have participated each year 2020–2022 (n=428)**

On survey day	2020			2021			2022		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Residents with signs and/or symptoms of at least one suspected infection*	647	2.7	2.5 – 2.9	717	3.0	2.8 – 3.2	742	3.1	2.9 – 3.4
Residents prescribed at least one antimicrobial	3,185	13.3	12.9 – 13.8	3,520	14.8	14.3 – 15.2	3,316	14.1	13.6 – 14.5
Residents prescribed at least one antimicrobial, excluding PRN orders not administered in the last 7 days	2,293	9.6	9.2 – 10.0	2,454	10.3	9.9 – 10.7	2,535	10.8	10.4 – 11.2
Residents prescribed at least one antimicrobial, excluding topical antimicrobials	1,689	7.1	6.7 – 7.4	1,735	7.3	7.0 – 7.6	1,837	7.8	7.5 – 8.1
Number of residents present	23,905	-	-	23,841	-	-	23,570	-	-

Sources: 1 Facility data collection form and 2: Antimicrobial and infection data collection form.

See Figure 2 for graphical presentation

\*See Technical Supplement for definition of (residential aged care facility associated) suspected infection<sup>7</sup>

CI = confidence interval.

**Table A4: Most commonly prescribed antimicrobials, Aged Care NAPS contributors, 2020–2022**

Antimicrobial	Prescriptions					
	2020 (n=7,602)		2021 (n=7,640)		2022 (n=8,373)	
	n	%	n	%	n	%
Clotrimazole	1,837	24.2	2,166	28.4	1,819	21.7
Cefalexin	1,541	20.3	1,397	18.3	1,636	19.5
Trimethoprim	461	6.1	423	5.5	473	5.6
Molnupiravir	0	0.0	0	0.0	464	5.5
Chloramphenicol	480	6.3	478	6.3	435	5.2
Doxycycline	334	4.4	330	4.3	361	4.3
Amoxicillin–clavulanic acid	311	4.1	310	4.1	347	4.1
Amoxicillin	262	3.4	280	3.7	316	3.8
Kenacomb®*	292	3.8	321	4.2	313	3.7
Miconazole	228	3.0	220	2.9	260	3.1

Source: Antimicrobial and infection form Section 2, Method 1 and 2 data.

See Figure 3 for graphical presentation.

Only the top 10 antimicrobials prescribed are listed.

\* Kenacomb® contains triamcinolone, neomycin, nystatin and gramicidin.

**Table A5: Most common indications for all antimicrobial prescriptions (therapeutic and prophylactic), Aged Care NAPS contributors, 2020–2022**

Indication	2020 (n=7,602)		2021 (n=7,640)		2022 (n=8,373)	
	n	%	n	%	n	%
Other – skin, soft tissue or mucosal	1,649	21.7	1,914	25.1	1,851	22.1
Cystitis	1,337	17.6	1,041	13.6	1,224	14.6
Other – respiratory tract	94	1.2	100	1.3	541	6.5
Tinea	627	8.2	741	9.7	529	6.3
Wound infection: non-surgical	466	6.1	479	6.3	505	6.0

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

See Figure 4 for graphical presentation.

Only the top 5 indications for antimicrobial prescriptions are listed.

**Table A6: Most common indications for prophylactic antimicrobial prescriptions, Aged Care NAPS contributors, 2020–2022**

Indication	2020 (n=1,824)		2021 (n=1,703)		2022 (n=1,574)	
	n	%	n	%	n	%
Cystitis	474	26.0	365	21.4	382	24.3
Other – medical prophylaxis	111	6.1	152	8.9	173	11.0
Other – skin, soft tissue or mucosal	231	12.7	277	16.3	156	9.9
Other – urinary tract	114	6.2	148	8.7	104	6.6
Asymptomatic bacteriuria	59	3.2	69	4.1	50	3.2

Source: Antimicrobial and infection form Section 2, Method 1 and 2 data.

See Figure 5 for graphical presentation.

Only the top 5 indications for prophylactic antimicrobial prescriptions are listed.

**Table A7: Comparison of therapeutic and prophylactic antimicrobial prescriptions for common indications, Aged Care NAPS contributors, 2022**

Indication	Therapeutic (n=6,781)		Prophylactic (n=1,592)		Total (n=8,373)
	n	%	n	%	
Other – skin, soft tissue or mucosal	1,695	91.6	156	8.4	1,851
Cystitis	842	68.8	382	31.2	1,224
Other – respiratory tract	517	95.6	24	4.4	541
Tinea	509	96.2	20	3.8	529
Wound infection: non-surgical	484	95.8	21	4.2	505
Pneumonia	413	93.9	27	6.1	440
Cellulitis	337	92.8	26	7.2	363
Conjunctivitis	258	92.1	22	7.9	280
Other – urinary tract	70	40.2	104	59.8	174
Paronychia	120	88.2	16	11.8	136

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

Only the top 10 indications for antimicrobial prescription are listed.

Unknown and medical prophylaxis indications for commencing an antimicrobial are excluded.

**Table A8: Key quality indicators, Aged Care NAPS contributors, 2016–2022**

Indicator	2016		2017		2018		2019		2020		2021		2022	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Indication for prescribing an antimicrobial														
Documented	1,382	78.9	1,181	79.2	1,907	76.9	3,391	73.2	5,811	76.4	5,623	73.6	6,721	80.3
Not documented	370	21.1	310	20.8	572	23.1	1,242	26.8	1,791	23.6	2,017	26.4	1,652	19.7
Review or stop date														
Documented	893	51.0	782	52.4	1,169	47.2	2,520	54.4	3,482	45.8	3,413	44.7	4,739	56.6
Not documented	859	49.0	709	47.6	1,310	52.8	2,113	45.6	4,120	54.2	4,227	55.3	3,634	43.4
<b>Total</b>	<b>1,752</b>	<b>-</b>	<b>1,491</b>	<b>-</b>	<b>2,479</b>	<b>-</b>	<b>4,633</b>	<b>-</b>	<b>7,602</b>	<b>-</b>	<b>7,640</b>	<b>-</b>	<b>8,373</b>	<b>-</b>

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.

**Table A9: Key quality indicators, Aged Care NAPS contributors that have participated each year 2020–2022 (n=428)**

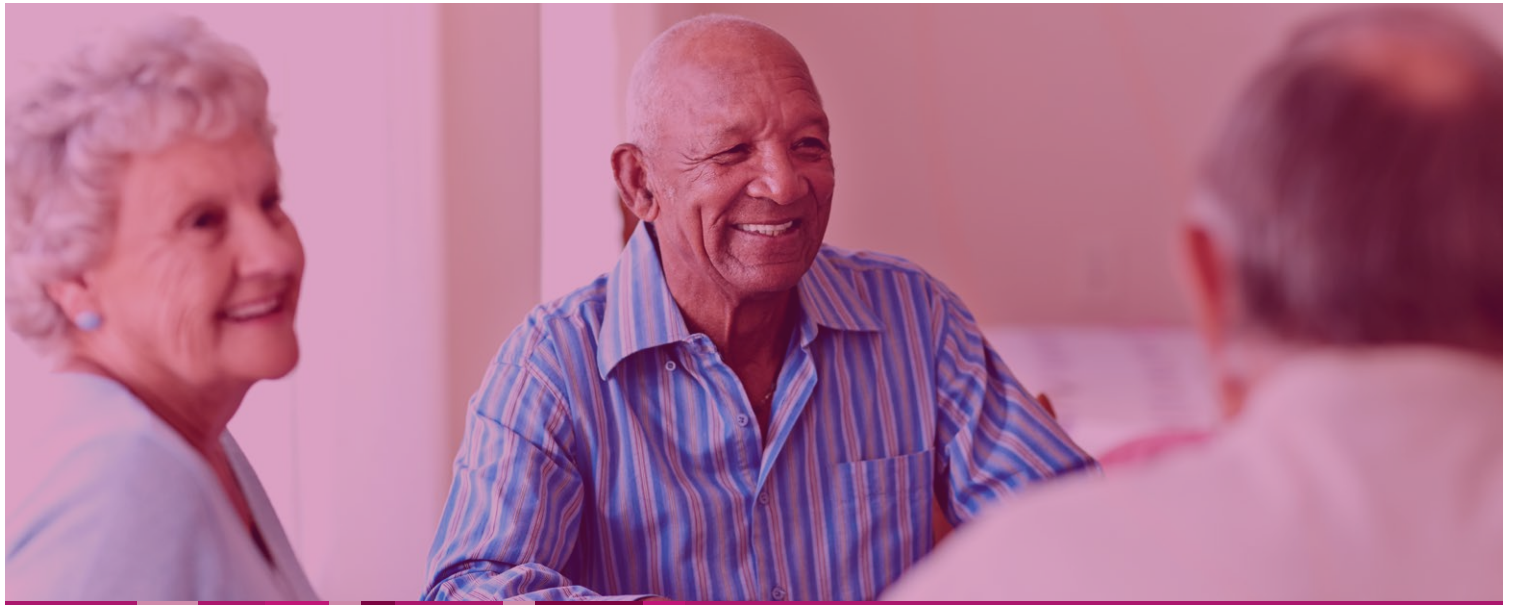
Indicator	2020			2021			2022		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Indication for prescribing an antimicrobial									
Documented	3,470	77.8	76.6 – 79.0	3,650	73.0	71.7 – 74.2	3,885	78.4	77.2 – 79.5
Not documented	988	22.2	21.0 – 23.4	1,351	27.0	25.8 – 28.3	1,073	21.6	20.5 – 22.8
Review or stop date									
Documented	2,019	45.3	43.8 – 46.8	2,343	46.9	45.5 – 48.2	2,747	55.4	54.0 – 56.8
Not documented	2,439	54.7	53.2 – 56.2	2,658	53.1	51.8 – 54.5	2,211	44.6	43.2 – 46.0
<b>Total</b>	<b>4,458</b>	<b>-</b>	<b>-</b>	<b>5,001</b>	<b>-</b>	<b>-</b>	<b>4,958</b>	<b>-</b>	<b>-</b>

Source: Antimicrobial and infection data collection form Section 2, Method 1 and 2 data.  
See Figure 6 for graphical presentation.  
CI= confidence interval.



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