



Aged Care Resistance and Antimicrobial Usage

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AUSTRALIAN COMMISSION
ON **SAFETY** AND **QUALITY** IN HEALTH CARE



Aged care - key messages

- Almost 1 in 10 residents of aged care homes that participated in the Aged Care National Antimicrobial Prescribing Survey (AC NAPS) was receiving at least one antimicrobial.
- There is a high rate of use of antimicrobials for unconfirmed 'infections' in aged care homes that participated in the AC NAPS. More than half of antimicrobial prescriptions were for residents who had no signs or symptoms of infection.
- Approximately one-quarter of prescriptions in 2016 and 2017 in aged care homes that participated in the AC NAPS did not include the reason for prescribing antimicrobials.
- In 2016 and 2017, approximately one-third of antimicrobial prescriptions in aged care homes that participated in the AC NAPS were for topical use.

2017 Aged Care National Antimicrobial Prescribing Survey (AC NAPS)

Results from the 2017 AC NAPS are of particular concern, because of potential ongoing safety risks for residents of aged care homes and multi-purpose services:

- More than half of the antimicrobial prescriptions (55.2%) were for residents with no signs and/or symptoms of a suspected infection in the week before the antimicrobial start date
- Only 18.4% of prescriptions were for residents with infection signs and/ or symptoms that met internationally accepted surveillance criteria, which is half the number that met the criteria in 2016

2017 AC NAPS

- The start date of the prescription was more than six months before the survey day for 26.9% of antimicrobial prescriptions
- The indication for starting an antimicrobial was not documented for 23.7% of prescriptions
- The antimicrobial review or stop date was not documented for 55.6% of prescriptions
- One-third (33.1%) of antimicrobial prescriptions were for topical use.

Table 3.18: Number and percentage of antimicrobial prescriptions for which infection signs and/or symptoms were recorded and McGeer et al. criteria were met, by body system, AC NAPS contributors, 2017

Body system	Number of prescriptions	With signs and symptoms of infection, <i>n</i> (%)	Aged care home-associated suspected infections*, <i>n</i> (%)	Infections that met McGeer et al. criteria, <i>n</i> (%)
Skin, soft tissue	424	170 (40.1)	155 (36.6)	82 (19.3)
Urinary tract	323	114 (35.3)	99 (30.7)	17 (5.3)
Respiratory tract	213	150 (70.4)	129 (60.6)	62 (29.1)
Other body system	86	29 (33.7)	27 (31.4)	11 (12.8)
Eye	73	38 (52.1)	36 (49.3)	34 (46.6)
Oral	17	9 (52.9)	10 (58.8)	3 (17.6)
Gastrointestinal tract	10	3 (30.0)	2 (20.0)	2 (20.0)
Total	1,146	513 (44.8)	458 (40.0)	211 (18.4)

* Aged care home-associated infections were those for which the resident's signs and/or symptoms started at least two calendar days after admission or readmission into the home.

Note: Excludes prescriptions for medical prophylaxis and unknown indications. There may have been infection signs and/or symptoms from more than one body system for some prescriptions.

Source: 2017 Aged Care NAPS³²

Why are aged care homes a focus area ?

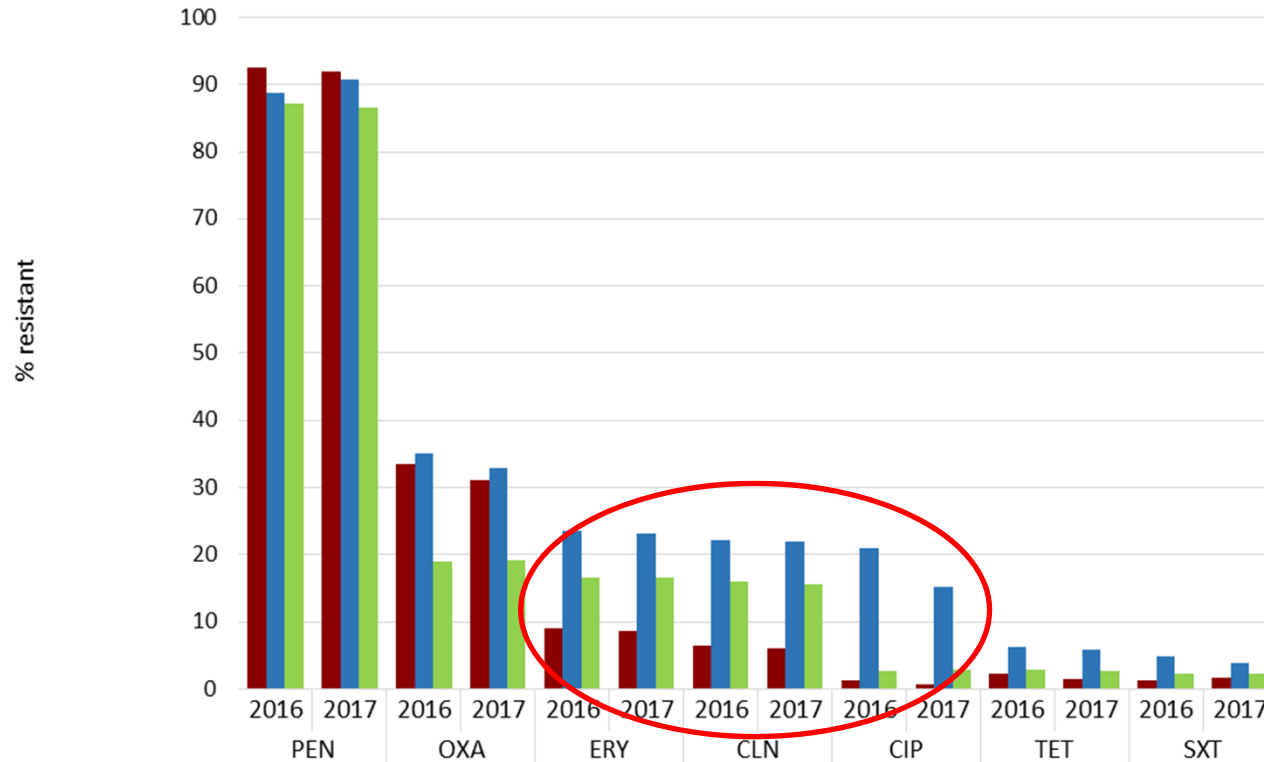
- There is a substantial burden of infection and colonisation with multidrug-resistant organisms among people living in aged care homes in Australia
- There are high levels of unnecessary antimicrobial prescribing and inappropriate antimicrobial use
- Aged care homes are an important community setting for monitoring AMR and antimicrobial use, because of the potential for amplifying AMR as a result of the high frequency of residents moving in and out of hospitals
- Enhanced infection prevention and control, and antimicrobial stewardship efforts in aged care homes and hospitals will help to reduce transmission between these settings and improve the safety of care provided to residents.

Why are aged care homes a focus area for AURA ?

- Oxacillin (methicillin) resistance was highest in aged care homes and multi-purpose services, suggesting that these are important reservoirs for methicillin-resistant *Staphylococcus aureus*.
- In particular, aged care homes had high rates of MRSA that was resistant to ciprofloxacin and erythromycin (Figure 4.40), a pattern most closely associated with the EMRSA-15 clone.

**Aged care homes are an
important reservoir for MRSA**

Staphylococcus aureus resistance, by clinical setting, 2016–2017



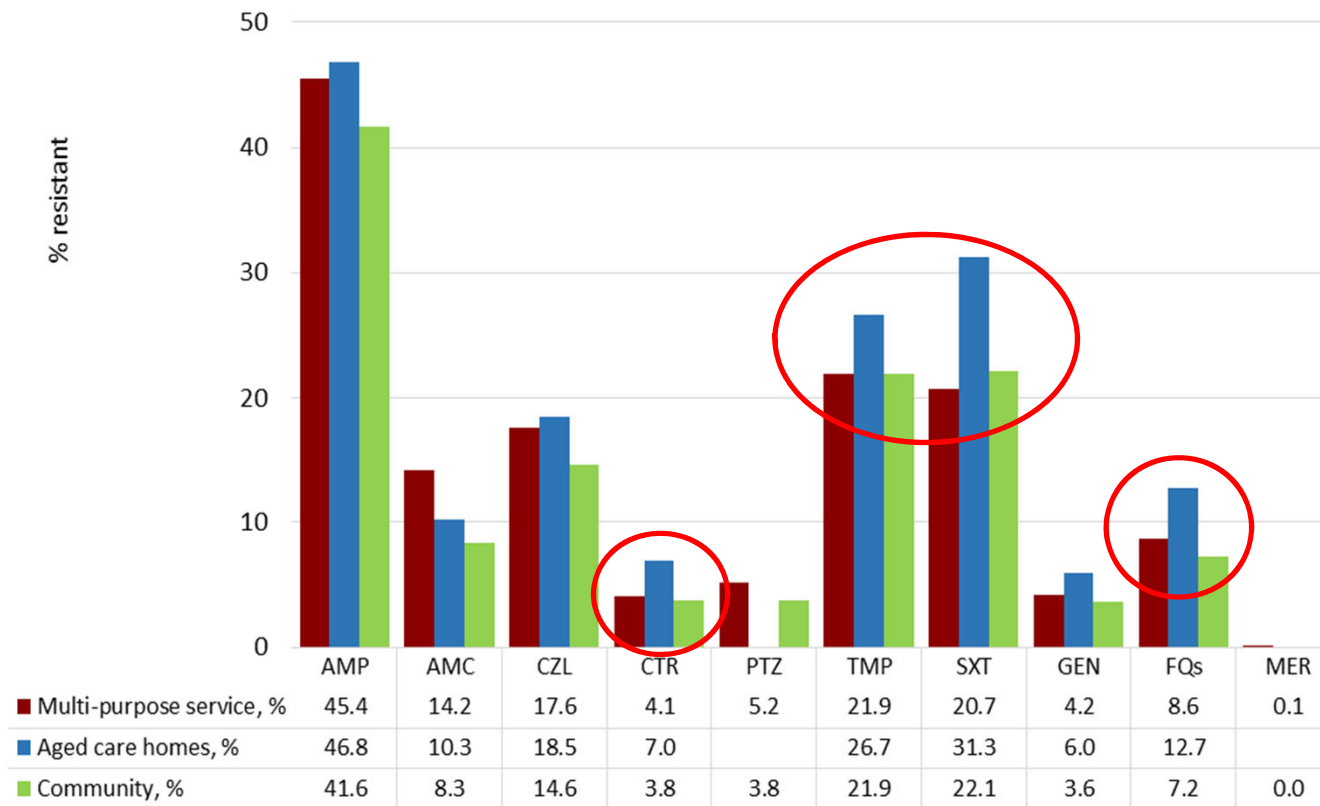
Features of the EMRSA-15 clone

CLN = clindamycin;
 ERY = erythromycin;
 OXA = oxacillin; PEN = penicillin;
 SXT = trimethoprim–sulfamethoxazole;
 TET = tetracyclines

Sources: AGAR and APAS (public hospitals); AGAR, APAS (Qld, SA) and SNP (private hospitals); APAS and SNP (community and aged care homes); APAS (multi-purpose services)

■ Multi-purpose service, %	92.5	91.9	33.4	31.1	9.0	8.7	6.5	6.1	1.3	0.8	2.4	1.6	1.3	1.7
■ Aged care homes, %	88.8	90.7	35.1	33.0	23.6	23.1	22.2	22.0	21.0	15.2	6.3	5.8	4.8	3.9
■ Community, %	87.1	86.6	19.0	19.1	16.7	16.5	15.9	15.7	2.8	3.0	2.8	2.7	2.3	2.4

Escherichia coli acquired resistance, by clinical setting, 2016–2017



Resistance in *E. coli* is also more common in aged care facilities

AMC = amoxicillin–clavulanic acid; AMP = ampicillin; CTR = ceftriaxone/cefotaxime; CZL = cefazolin; FQs = ciprofloxacin/norfloxacin; GEN = gentamicin; MER = meropenem; nd = no data (either not tested or tested against an inadequate number of isolates); PTZ = piperacillin–tazobactam; SXT = trimethoprim–sulfamethoxazole; TMP = trimethoprim

Note: For clarity of presentation, data for 2016 and 2017 have been combined. Raw data for the individual years are available in *AURA 2019: Supplementary data*.

Sources: AGAR and APAS (public hospitals); AGAR, APAS (Qld, SA) and SNP (private hospitals); APAS and SNP (community and aged care homes); APAS (multi-purpose services)

Aged care homes – Areas for Action

- The Commission has widely disseminated the 2017 AC NAPS and APAS results, to promote the importance of this setting as a focus for prevention and control of AMR
- AURA data will be of value to inform the new **Aged Care Quality Standards**. All aged care homes will be assessed against these standards from 1 July 2019. The standards will require aged care homes to show practices that promote appropriate antibiotic prescribing and use to support best care, and reduce the risk of increasing resistance to antibiotics.
- The Commission will work with the Aged Care Quality and Safety Commission to promote the importance of ongoing surveillance of AMR and AU, effective infection prevention and control programs, and the development and implementation of AMS programs in Australian aged care homes, to support safe, quality care.

Aged care homes – Areas for Action

- Infection control standards
- Antimicrobial stewardship - education
 - Recognise but don't treat asymptomatic bacteriuria in the elderly or give long-term prophylaxis
 - Minimise empirical use of topical antimicrobials for 'rashes'



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