Antimicrobial Stewardship in Residential Aged Care Facilities

Results of the First Aged Care National Antimicrobial Prescribing Survey

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AUSTRALIAN INFECTION SURVEILLANCE - AGED CARE

Principles of AMS

as they apply to Residential Aged Care

Accreditation for AMS	No. Some requirements for Medication Management/Infection prevention.
National Clinical Care Standard for AMS	Not compulsory for GPs (Pilot of clinical care indicators in aged care)
Governance	Aged care back under DOH Aged Care Statement of Principles
Antimicrobial Policy?	General practice or RACF? ? Lack of formal relationships between both
Trained staff in AMS	GPs? Registered nurse? Community pharmacist? ~55% RACF have some QUM
Formulary restriction?	PBS. Antibiotics often kept on premises
Guidelines	Yes. eTG, NPS but syndrome based prescribing common, atypical presentations
Aged care specific issues	End of life care/role of antibiotics in palliation

AGED CARE NAPS National Antimicrobial Prescribing Survey

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- Lack of comprehensive Australian data in RACFs
  - Quantity and quality of antibiotic use
  - Prevalence and types of infection
- Evaluate survey methodology: suitability, sustainability
- Jointly funded by the Australian Commission on Safety and Quality in Health Care, NHMRC grant and Guidance
- Build on the Hospital NAPS (since 2013)

Survey development: rationale

Stakeholder review	Implications for the project
RACFs across Australia vary according to location, size and providers.	**Representation across states**, **remoteness**, **size** and **organisation types**
Workforce mainly comprised of Personal Care Assistants and nurses. GPs and pharmacists are off-site.	Survey content should suit the **needs** and **level of expertise** of the **workforce**
There are a number of organisations trying to achieve improved quality of care in Australian RACFs.	**Engage with representatives from national and state groups**, including Department of Health, any state-based government Aged Care divisions and professional societies
5-13% of residents on AB at any given time. Therefore, many facilities are likely to have small no. of residents that meet inclusion	Consider the **most appropriate data collection methodology** and **report** design.
AMS guidelines are lacking in the Australian aged care sector	Ensure the pilot survey findings are **published** to assist in the identification of priority areas and the development of RACF-specific AMS programs

Survey Design

- Single-day snapshot survey (June-August 2015)
- Included residents:
  - receiving an antimicrobial AND/OR
  - having a confirmed or suspected infection (McGeer Criteria)
- Data collection forms, user guide and case examples
- Onsite validation with staff
- Electronic data entry portal development
  - Algorithms to support McGeer definitions
- Recruitment
  - Letters sent to peak bodies and aged care providers
  - Emails to existing hospital NAPS participants
  - Professional societies

Antibiotic Form

At 8 a.m. on audit date, has the resident been prescribed an antimicrobial?* ❒ no ❒ yes; *complete* ***Resident Form - antimicrobials***

On audit date, does the resident have signs or symptoms of infection?* ❒ no ❒ yes; *complete* ***Resident Form - infections***

If **yes to both or multiple antimicrobials prescribed, refer to quick guide for further directions*

1. Demographics	Identification number	Date of birth/age	Gender	Admitted to hospital within 30 days	HITH / In-reach	Indwelling urinary catheter
		/ /	M / F / O	Yes / No	Yes / No	Yes / No

2. Antimicrobials

Allergies and adverse drug reactions to antimicrobials

❒ nil known ❒ not documented ❒ yes; *specify drug and nature*

Date first prescribed*	Date first administered*	Antimicrobial	Dose	Route	Freq	Initial mode of prescription: Unknown	Written by prescriber	Phone order	❒ resident not examined by a prescriber; If examined; *date*	Review/stop date documented	Indication documented	Specify documented or presumed indication	Was this for prophylaxis?**
/ /	/ /								/ /				
/ /	/ /								/ /				
/ /	/ /								/ /				
/ /	/ /								/ /				

**If unable to be determined or if > 6 months, document; 'unknown' or '> 6 months' and do not include in Sections 3, 4 and 5* ***if prescribed for prophylaxis do not include in Sections 3, 4 and 5*

3. Microbiology; *complete for specimens collected within **1 week before antimicrobial first prescribed***

❒ **not collected / not assessable;** *proceed to section 4*

❒ **collected;** *complete below and if multiple specimens of the same type, only include the earliest one*

❒ Urine ❒ final report unavailable	Date collected / / ❒ final report attached	❒ Respiratory virus test Date collected / / ❒ final report attached
❒ Sputum ❒ final report unavailable	Date collected / / ❒ final report attached	❒ *Clostridium difficile* test Date collected / / ❒ final report attached
❒ Swab ❒ final report unavailable	Date collected / / ❒ final report attached	❒ Norovirus test Date collected / / ❒ final report attached
❒ Stool ❒ final report unavailable	Date collected / / ❒ final report attached	❒ Other
❒ Blood ❒ final report unavailable	Date collected / / ❒ final report attached	

4. Investigations and devices

Urinary catheter; *present within **1 week before antimicrobial first prescribed***

❒ no ❒ intermittent *(in and out)* ❒ indwelling ❒ suprapubic ❒ external

Urinary dipstick; *performed within **1 week before antimicrobial first prescribed***

❒ not performed ❒ performed; *date* / /

Nitrite ❒ positive ❒ negative ❒ not recorded

Leucocyte esterase ❒ 1+ ❒ 2+ ❒ 3+ ❒ not recorded

Clinical notes / comments / radiology

Resident Form – antimicrobials

5. Infections; *complete for signs or symptoms of infection present within **1 week before antimicrobial first prescribed**; multiple system criteria are possible*

Urinary tract

❒ RACF associated
❒ Non-RACF associated

All urinary tract criteria
- ❒ Acute pain on urination
- ❒ Acute pain, swelling or tenderness of the testes, epididymis or prostate
- ❒ New onset low blood pressure, with no alternate site of infection
- ❒ Either acute change in mental status or acute functional decline with no alternate diagnosis
- ❒ New onset chest wall or back pain or tenderness
- ❒ New onset suprapubic pain
- ❒ Pus discharging from around a catheter
- ❒ Blood in urine

New or marked increase in;
- ❒ incontinence
- ❒ urgency
- ❒ frequency

Respiratory tract

❒ RACF associated
❒ Non-RACF associated

All respiratory tract criteria
- ❒ Runny nose or sneezing
- ❒ Stuffy nose
- ❒ Sore throat
- ❒ Hoarseness
- ❒ Pain on swallowing
- ❒ Swollen or tender neck glands
- ❒ New headache or eye pain
- ❒ Myalgia or muscle pain
- ❒ Malaise
- ❒ New or increased cough
- ❒ New or increased sputum
- ❒ O_2 saturation < 94% on room air or a reduction of > 3% from baseline
- ❒ New or changed lung abnormalities
- ❒ Chest wall pain
- ❒ Respiratory rate ≥ 25 breaths per minute
- ❒ Normal or no chest X-ray
- ❒ Chest X-ray showing pneumonia or new infiltrate

Skin, soft tissue, oral, eye

❒ RACF associated
❒ Non-RACF associated

Cellulitis, soft tissue or wound infection
- ❒ Pus present at wound, skin or soft tissue site
- ❒ Heat
- ❒ Redness
- ❒ Swelling
- ❒ Tenderness or pain
- ❒ Serous discharge

Herpes simplex or zoster
- ❒ Vesicular rash
- ❒ Doctor or laboratory confirmation

Fungal skin infection
- ❒ Characteristic rash or lesions
- ❒ Doctor or laboratory confirmation

Scabies
- ❒ Maculopapular rash
- ❒ Itch
- ❒ Doctor or laboratory confirmation
- ❒ Linkage to laboratory confirmed scabies

Oral candidiasis
- ❒ Presence of raised white patches or plaques in mouth
- ❒ Doctor or dental provider confirmation

Conjunctivitis
- ❒ Pus from one or both eyes present > 24 hours
- ❒ New or increased conjunctival redness
- ❒ Itching or pain > 24 hours

Gastrointestinal tract

❒ RACF associated
❒ Non-RACF associated

All gastrointestinal tract criteria
- ❒ Nausea
- ❒ Abdominal pain or tenderness

Vomiting
- ❒ 1 episode in 24 hours
- ❒ 2 or more episodes in 24 hours

Diarrhoea
- ❒ 1 or 2 episodes in 24 hours
- ❒ 3 or more liquid or watery stools above what is normal for the resident within 24 hours
- ❒ Pseudomembranous colitis is identified
- ❒ Toxic megacolon is identified

Systemic

❒ RACF associated
❒ Non-RACF associated

Primary bloodstream criteria
- ❒ A single positive blood culture
- ❒ Two or more positive blood cultures (same organism)
- ❒ New hypothermia (< 34.5°C or does not register)
- ❒ Drop in systolic blood pressure of > 30mmHg from baseline

Unexplained febrile episode
- ❒ Documented record of fever on two or more occasions at least 12 hours apart in any 3 day period with no known infectious or non-infectious cause

Constitutional criteria

complete for all residents

❒ No constitutional criteria identified

Fever
- ❒ Single oral temperature > 37.8°C
- ❒ Repeated oral temperature > 37.2°C, or rectal temperature > 37.5°C
- ❒ Single temperature > 1.1°C over baseline from any site
- ❒ Chills or rigors

Acute change in mental status from baseline
(confusion, forgetfulness, etc.)
- ❒ Acute onset
- ❒ Fluctuating course
- ❒ Inattention
- ❒ Disorganised thinking or altered level of consciousness

Acute functional decline from baseline
Tick all relevant:
- ❒ Bed mobility
- ❒ Transfer
- ❒ Locomotion within facility
- ❒ Dressing
- ❒ Toilet use
- ❒ Personal hygiene
- ❒ Eating

As according to full blood examination results
- ❒ White blood cells elevated (WBC, leucocytes, etc.)
- ❒ Left shift documented

Other infections not listed above
❒ RACF associated
❒ Non-RACF associated

National Antimicrobial Prescri

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National Antimicrobial Prescri

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AGED CARE NAPS National Antimicrobial Prescribing Survey

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Welcome **Caroline Chen!** | **My Account** | Log Out

Health Care Facility : **Demo RACF 1** Change

Home | Resources | Facility Details | My Surveys | Resident | Reports | Site Management

HOSPITAL NAPS

Demographics | Antimicrobials | Microbiology/Investigations/Infections

Resident Identification Number: 123456

Allergies and adverse drug reactions to antimicrobials ◉ Yes ○ Nil known ○ Not documented

for Allergies and adverse drug reactions to antimicrobials, please specify drug and nature:

penicillin - rash

Antimicrobials:

Date prescribed	Date administered	Antimicrobial	Dose	Route	Freq	Indication
> 6 months	> 6 months	Cephalexin	1 Grams (g)	Oral	8 hourly, Three times a day (tds)	Osteomyelitis (bone infection)

Date first prescribed * ☑ >6 months

Date first administered * ☑ >6 months

Antimicrobial * Cephalexin

Dose * 1 Grams (g)

Route * Oral

Frequency * 8 hourly, Three times a day (tds)

Initial mode of prescription * ○ Unknown ◉ Written by prescriber ○ Phone order

Review / stop date documented * ○ Yes ◉ No

Indication Documented * ○ Yes ◉ No

Indication for Antimicrobial * Osteomyelitis (bone infection)

Was this for prophylaxis? * ○ Yes ◉ No/Unknown

Save | Cancel

Facilities

Category		Number of participating RACFs n (%)
State	NSW	17 (9.1)
	QLD	7 (3.8)
	SA	8 (4.3)
	TAS	6 (3.2)
	VIC	130 (69.9)
	WA	18 (9.7)
Remoteness	Major Cities	51 (27.4)
	Inner regional	81 (43.5)
	Outer regional	45 (24.2)
	Remote	8 (4.3)
	Very remote	1 (0.5)
Provider type	Not for profit	37 (19.9)
	Charitable	9
	Religious	20
	Community Based	8
	Government	141 (75.8)
	State Government	140
	Local Government	1
	Private	8 (4.3)
Total		**186**

High numbers from Victoria

186 facilities participated in the PPS

Auditors

Profession category	Number (%)
ICP	56 (47.5)
Nurse	42 (35.6)
Nurse Practitioner	1 (0.8)
Pharmacist	13 (11.0)
Quality manager	2 (1.7)
Other	4 (3.4)
TOTAL	118

Resources

Question	Response %
Online planning system used	54.4%
Availability of Therapeutic Guidelines: Antibiotic	Electronic/hard copy/both 85.3% No access – 14.7%
Access to microbiology reports	Electronic only – 16.2% Hard copy only – 30.9% Both electronic and hard copy – 51.5% No access – 1.5%
Pharmacy services provided	Supply of medicines – 94.1% Education – 35.3% Surveying – 33.8% Medicines review – 35.3%

Residents (n=7,589)

	National Aggregate n (%)
>85 years	3,968 (52.3)
Male	2,612 (34.4)

Admitted to hospital in previous 30 days	277 (3.7)
Hospital in the Home or In-reach services	78 (1.0)
Intravenous catheter present	7 (0.1)
Indwelling urinary catheter present	329 (4.3)

Prevalence of antimicrobial use

		Number of RACFs	Number of residents surveyed	Prevalence of antimicrobial use n (%)
State	NSW	17	545	66 (12.1)
	QLD	7	481	31 (6.4)
	SA	8	559	99 (17.7)
	TAS	6	147	19 (12.9)
	VIC	130	4,704	334 (7.1)
	WA	18	1,153	310 (26.9)
Remoteness	Major Cities	51	2,881	397 (13.8)
	Inner regional	81	3,323	312 (9.4)
	Outer regional	45	1,245	123 (9.9)
	Remote	8	125	25 (20.0)
	Very remote	1	12	2 (16.7)
Provider type	Not for profit	37	2,181	426 (19.5)
	Government	141	4,963	395 (8.0)
	Private	8	445	38 (8.5)
National aggregate		**186**	**7,589**	**859 (11.3)**

Antimicrobials

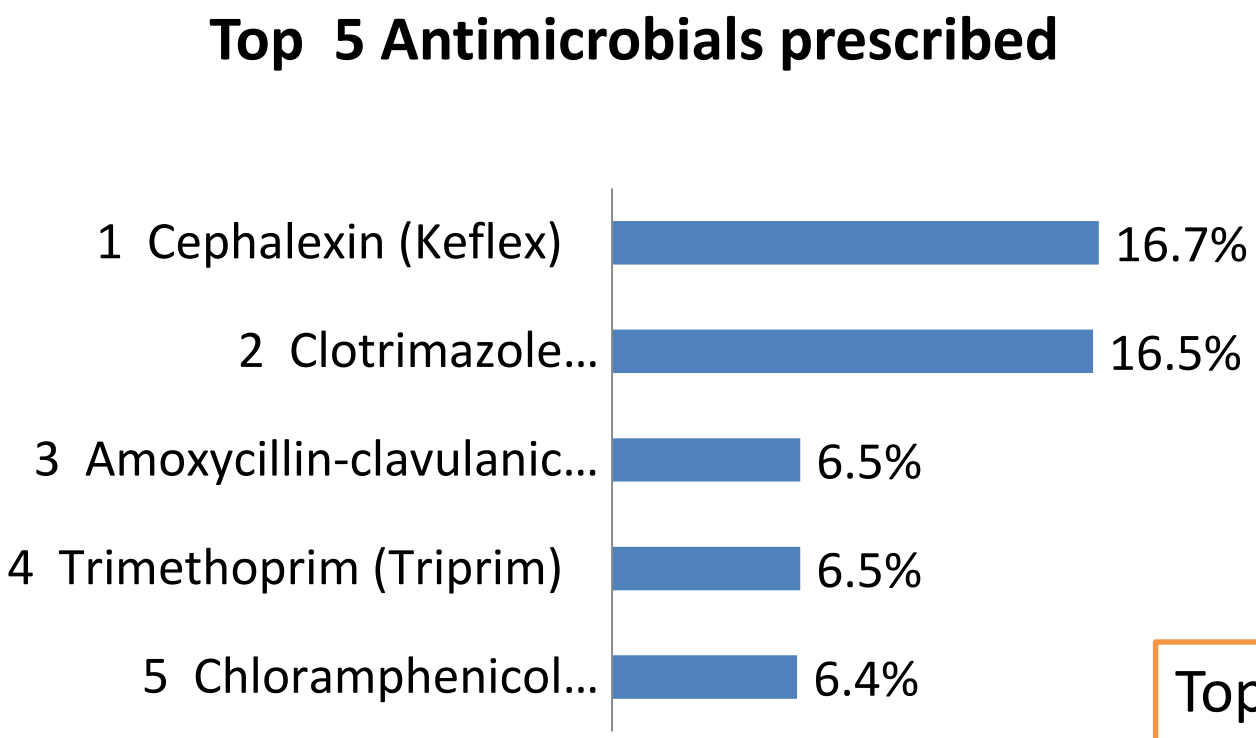
- 975 prescriptions were recorded for 859 residents

Quality Indicator	% of total antimicrobial prescriptions (n = 975)
Indication documented	68.4
Start date documented	64.1
Review or stop date documented	35.0

Best practice >95%

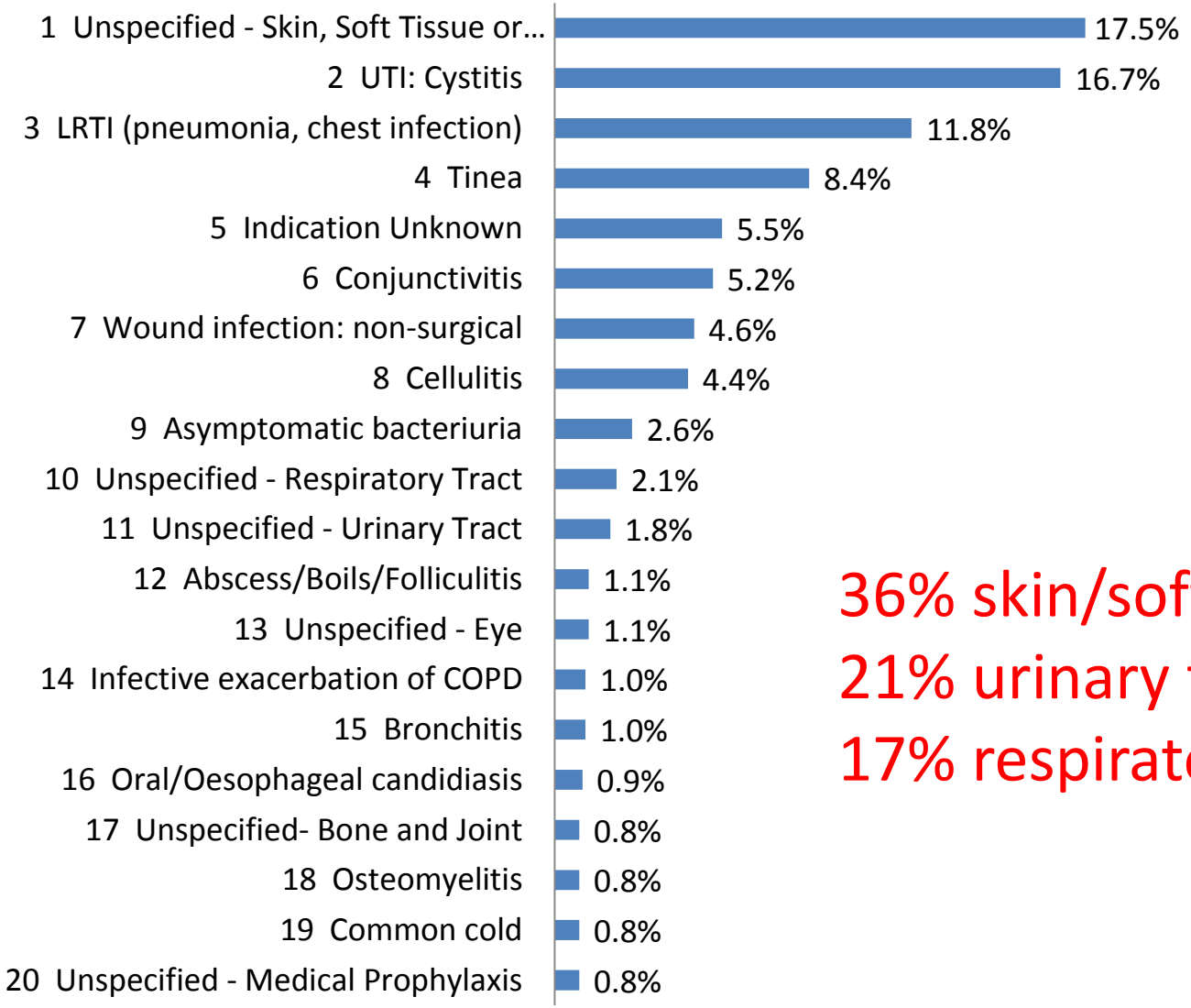
- Where start date was documented **31%** prescriptions were started **> 6 months ago**
- 21.7% of prescriptions were prescribed for residents that did not have any signs or symptoms of infection <u>within the 1 week prior to the antimicrobial start date</u>

Antimicrobials



Topical antimicrobials 30% of all prescriptions

Indications

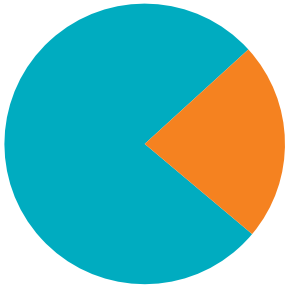


36% skin/soft tissue

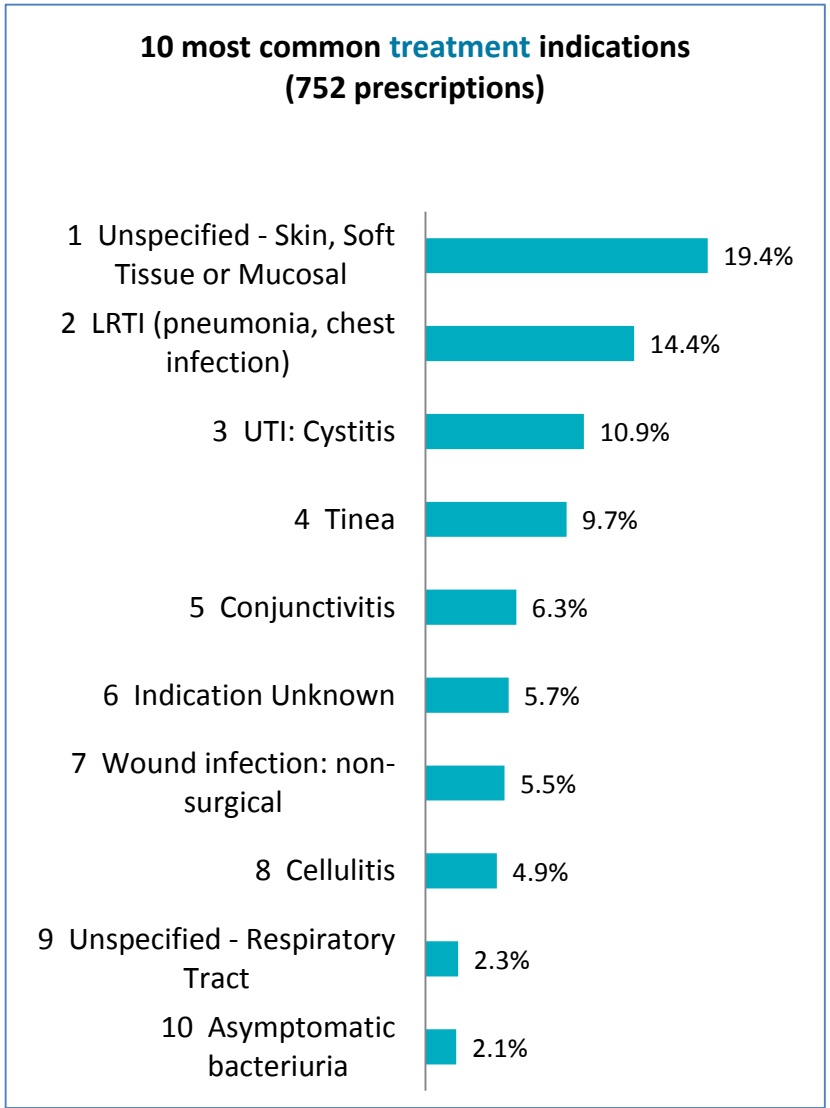
21% urinary tract

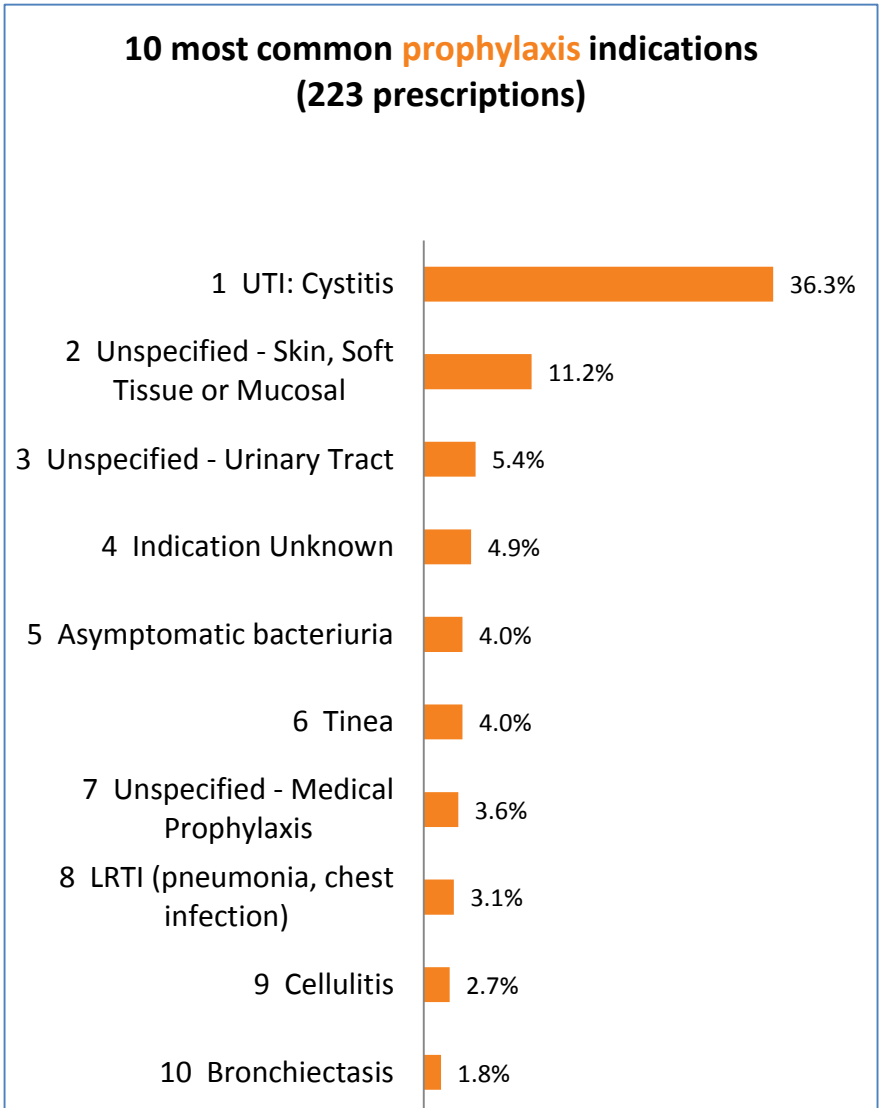
17% respiratory tract

Treatment vs. Prophylaxis



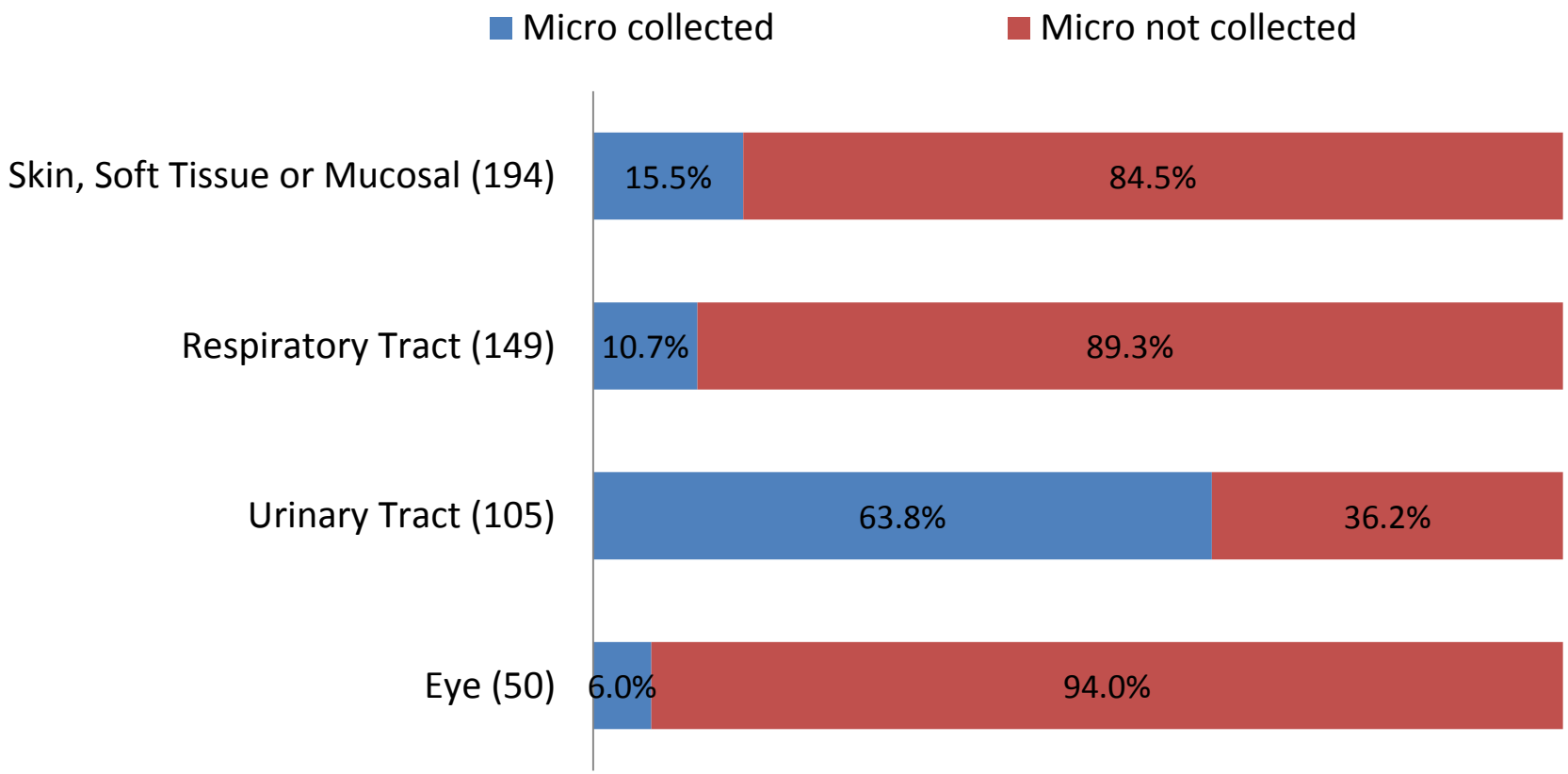
23% prophylaxis





Microbiology

Percentage of prescriptions with microbiological samples taken, by body system



Prevalence of infections

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		Number of RACFs	Number of beds surveyed	Prevalence of infection n (%)
State	NSW	17	545	32 (5.9)
	QLD	7	481	17 (3.5)
	SA	8	559	53 (9.5)
	TAS	6	147	9 (6.1)
	VIC	130	4,704	172 (3.7)
	WA	18	1,153	61 (5.3)
Remoteness	Major Cities	51	2,881	127 (4.4)
	Inner regional	81	3,323	148 (4.5)
	Outer regional	45	1,245	50 (4.0)
	Remote	8	125	17 (13.6)
	Very remote	1	12	2 (16.7)
Provider type	Not for profit	37	2,181	120 (5.5)
	Government	141	4,963	207 (4.2)
	Private	8	445	17 (3.8)
National aggregate		**186**	**7589**	**344 (4.5)**

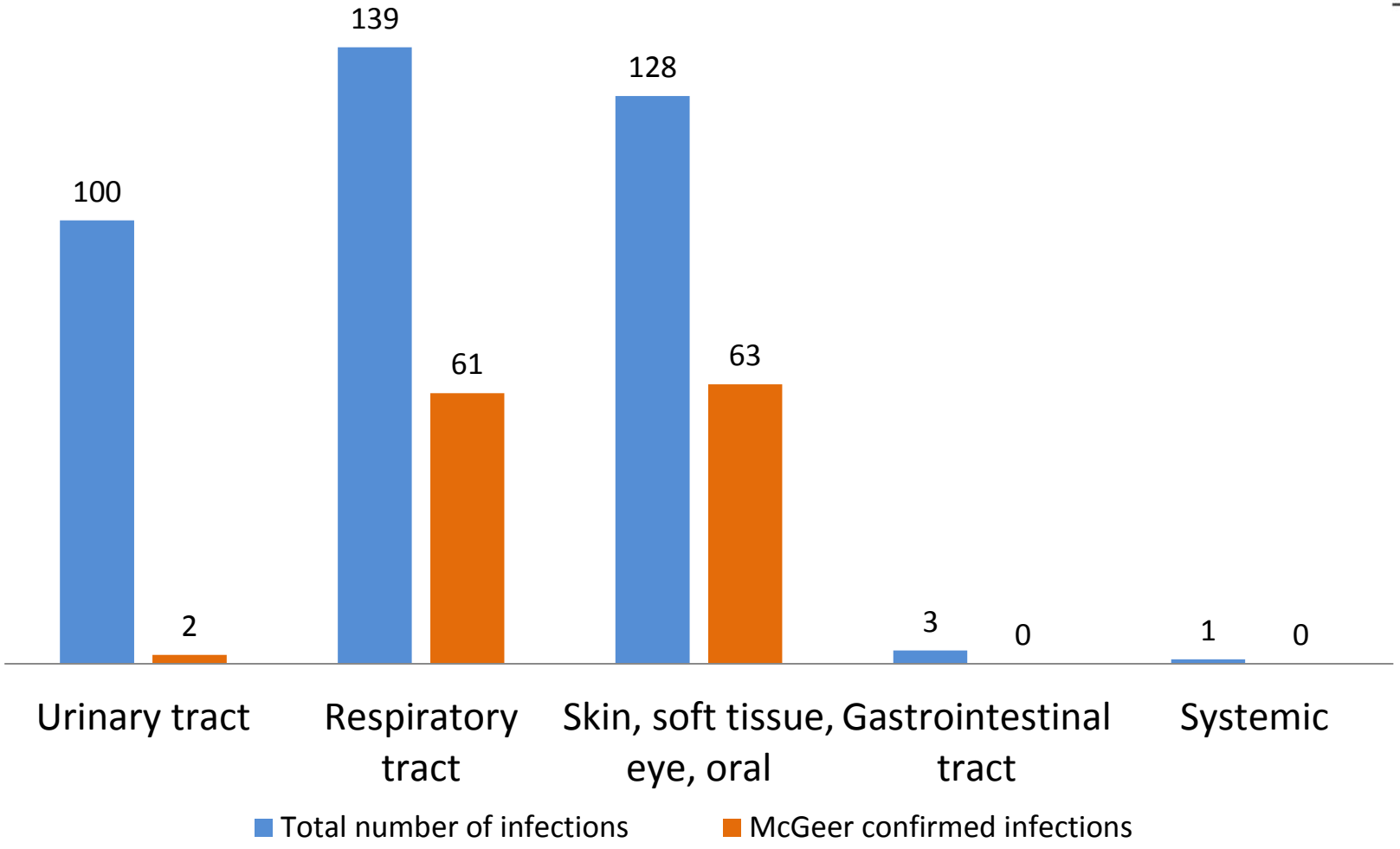
Signs and symptoms of infection

Approximately 1 in 5 prescriptions (21.7%) were prescribed for residents that did not have any signs or symptoms of infection <u>within the 1 week prior to the antimicrobial start date</u>

For those prescriptions where signs and symptoms of infection were recorded, only 32.8% met the McGeer infection criteria.

Is the McGeer Criteria suitable to assess appropriateness of prescribing?

Signs and symptoms of infection : McGeer confirmed



Unnecessary prescribing of antimicrobials leads to antimicrobial resistance

A recent study in 186 Australian **residential aged care facilities** highlighted:

32% | no documented reason

In 32% of cases, the reason for the **antimicrobial prescription** was not written in the notes.

65% | no documented review or stop date

65% of the **antimicrobial prescriptions** did not have a review or stop date written in the notes.

18% | unspecified skin infections

The most common reason (18%) for **antimicrobial prescriptions** was unspecified skin infections.

20% | no infection signs or symptoms

Approximately 1 in 5 **antimicrobial prescriptions** were prescribed for residents who **did not** have any signs and symptoms of infection.

31% | prescribed over 6 months

31% of the **antimicrobial prescriptions** were prescribed for greater than six months. Of these, 98% **did not** have a review or stop date documented.

Improve antimicrobial prescribing in your residential aged care facility

To better understand your prescribing patterns, implement an antimicrobial stewardship program today!

Learn more about antimicrobial use and resistance at **www.safetyandquality.gov.au**

Participate in the aged care National Antimicrobial Prescribing survey at **www.naps.org.au**

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

NCAS National Centre for Antimicrobial Stewardship

AIS-AC AUSTRALIAN INFECTION SURVEILLANCE - AGED CARE

Post survey review

SurveyMonkey feedback questionnaire

Site visits to 5 states (VIC, NSW, SA, QLD and WA)

At the local facility level

- Majority (81%) were able to complete the survey in one day
- Validation testing done prior to the launch indicated high degree of agreement in data collected by on-site staff and project staff
- Limiting factors included:
  - Poor documentation, access to pathology
  - Old computer systems
- 96% willing to participate again/ recognition of importance
- 91% were happy with the amount of information required
- High degree of satisfaction with training/support

What next for in RACF & AMS

- Single-day snapshot methodology often yielded small numbers → may have impacted on representativeness of results
- ACNAPS: Streamline data collection tools and website design

- Feedback and reporting/governance
  - Site visits: some observed difficulty in 'owning' the survey and knowing what to do with the results at a local facility level
  - Workforce needs to feel empowered to action change in their own facility
  - How to engage the professional groups: nursing, ICP, general practice and pharmacists

- **We need a systems approach guided by the Aged Care Sector Statement of Principles** (Aged Care Sector Committee and the Australian Government, 2015)

Partners	Roles
Consumers and carers	• Accessing information about aged care services to support informed choices • Contributing to the cost of their care according to their means • Being clear about their needs and how services can best meet them • Actively exercising choice and directing the care they want, to the extent they wish to do so • Caring for themselves and for those for whom they have responsibility
Providers and workforce	• Providing quality aged care services that respect and respond to the diversity of consumers • Supporting consumers to have a high quality of life • Supporting consumers to be active partners in care planning and making choices about their care • Pursuing innovation • Delivering best practice governance and management capability to improve efficiency, productivity and quality in service delivery • Actively contributing to developing sector leadership and reputation • Creating and maintaining strong relationships with communities that contribute to an understanding of local service needs • Building the skills and capability of all organisations and individuals providing care • Providing analysis and experience about how government policies and funding operate at the local level • Providing the necessary information to consumers about the services and support they can access • Being clear about what can be delivered and the level of contribution which consumers will have to make
Australian Government	• Acting as system steward through setting policy with appropriate funding that fosters flexibility, responsiveness and innovation amongst providers • Commissioning a contestable market of public, private and not for profit providers competing on value for money and performance • Embracing an evidence-based approach to policy design • Promoting, supporting and monitoring quality • Maintaining an effective safety net that ensures cost is not a barrier to receiving

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