Antimicrobial Stewardship in Residential Aged Care Facilities

Results of the First Aged Care National Antimicrobial Prescribing Survey

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Dr. Noleen Bennett and the NAPS team
# Principles of AMS
as they apply to Residential Aged Care

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

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

<table>
<thead>
<tr>
<th>Identification number</th>
<th>Date of birth/age</th>
<th>Gender</th>
<th>Admitted to hospital within 30 days</th>
<th>HITH / In-reach</th>
<th>Indwelling urinary catheter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M / F / O</td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

### 2. Antimicrobials

Allergies and adverse drug reactions to antimicrobials

- □ nil known
- □ not documented
- □ yes; specify drug and nature

Initial mode of prescription

- Unknown
- Written by prescriber
- Phone order
- If examined; date
- Review/sop date documented
- Indication documented
- Specify documented or presumed indication

Date first prescribed*  □/□

Date first administered* □/□

Antimicrobial

Dose

Route

Freq

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
  - Date collected □/□
  - □ Respiratory virus test
    - Date collected □/□
  - □ final report unavailable
  - □ final report attached

- □ Sputum
  - Date collected □/□
  - □ Clostridium difficile test
    - Date collected □/□
  - □ final report unavailable
  - □ final report attached

- □ Swab
  - Date collected □/□
  - □ final report unavailable
  - □ final report attached

- □ Stool
  - Date collected □/□
  - □ Norovirus test
    - Date collected □/□
  - □ final report unavailable
  - □ final report attached

- □ Blood
  - Date collected □/□
  - □ Other
  - □ final report unavailable
  - □ 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
5. Infections; complete for signs or symptoms of infection present within 1 week before antimicrobial first prescribed; multiple system criteria are possible

<table>
<thead>
<tr>
<th>Urinary tract</th>
<th>Respiratory tract</th>
<th>Skin, soft tissue, oral, eye</th>
<th>Gastrointestinal tract</th>
<th>Systemic</th>
<th>Constitutional criteria for all residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>RACF associated</td>
<td>RACF associated</td>
<td>RACF associated</td>
<td>RACF associated</td>
<td>RACF associated</td>
<td>No constitutional criteria identified</td>
</tr>
<tr>
<td>Non-RACF associated</td>
<td>Non-RACF associated</td>
<td>Non-RACF associated</td>
<td>Non-RACF associated</td>
<td>Non-RACF associated</td>
<td>Fever</td>
</tr>
</tbody>
</table>

### 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 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
- O₂ 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 criteria
- 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 criteria
- Diarrhea
  - 1 episode in 24 hours
  - 2 or more episodes in 24 hours
- Vomiting
  - 1 episode in 24 hours
  - 2 or more episodes in 24 hours

### Systemic criteria
- 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

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

### Constitutional criteria from baseline
- 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
### Demographics

- **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

<table>
<thead>
<tr>
<th>Date prescribed</th>
<th>Date administered</th>
<th>Antimicrobial</th>
<th>Dose</th>
<th>Route</th>
<th>Freq</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 6 months</td>
<td>= 6 months</td>
<td>Cephalaxin</td>
<td>1 Grams (g)</td>
<td>Oral</td>
<td>8 hours, Three times a day (tids)</td>
<td>Osteomyelitis (bone infection)</td>
</tr>
</tbody>
</table>

- **Antimicrobial:** Cephalaxin
- **Dose:** 1 Grams (g)
- **Route:** Oral
- **Freq:** 8 hours, Three times a day (tids)
- **Indication:** Osteomyelitis (bone infection)
## Facilities

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

<table>
<thead>
<tr>
<th>Profession category</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICP</td>
<td>56 (47.5)</td>
</tr>
<tr>
<td>Nurse</td>
<td>42 (35.6)</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>13 (11.0)</td>
</tr>
<tr>
<td>Quality manager</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (3.4)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>118</strong></td>
</tr>
</tbody>
</table>

## Resources

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online planning system used</strong></td>
<td>54.4%</td>
</tr>
<tr>
<td><strong>Availability of Therapeutic Guidelines: Antibiotic</strong></td>
<td></td>
</tr>
<tr>
<td>No access</td>
<td>14.7%</td>
</tr>
<tr>
<td><strong>Electronic/hard copy/both</strong></td>
<td><strong>85.3%</strong></td>
</tr>
<tr>
<td><strong>Access to microbiology reports</strong></td>
<td></td>
</tr>
<tr>
<td>Hard copy only</td>
<td>16.2%</td>
</tr>
<tr>
<td><strong>Electronic only</strong></td>
<td><strong>Hard copy only – 30.9%</strong></td>
</tr>
<tr>
<td>Both electronic and hard copy</td>
<td>30.9%</td>
</tr>
<tr>
<td>No access</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Medicines review</strong></td>
<td><strong>35.3%</strong></td>
</tr>
<tr>
<td><strong>Pharmacy services provided</strong></td>
<td>Supply of medicines – 94.1%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>35.3%</td>
</tr>
<tr>
<td><strong>Surveying</strong></td>
<td>33.8%</td>
</tr>
<tr>
<td><strong>Supply of medicines</strong></td>
<td><strong>Education – 35.3%</strong></td>
</tr>
<tr>
<td><strong>Surveying – 33.8%</strong></td>
<td><strong>Surveying – 33.8%</strong></td>
</tr>
<tr>
<td><strong>Medicines review – 35.3%</strong></td>
<td><strong>Medicines review – 35.3%</strong></td>
</tr>
</tbody>
</table>
## Residents (n=7,589)

<table>
<thead>
<tr>
<th>National Aggregate</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;85 years</td>
<td>3,968 (52.3)</td>
</tr>
<tr>
<td>Male</td>
<td>2,612 (34.4)</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted to hospital in</td>
<td>277 (3.7)</td>
</tr>
<tr>
<td>previous 30 days</td>
<td></td>
</tr>
<tr>
<td>Hospital in the Home or</td>
<td>78 (1.0)</td>
</tr>
<tr>
<td>In-reach services</td>
<td></td>
</tr>
<tr>
<td>Intravenous catheter</td>
<td>7 (0.1)</td>
</tr>
<tr>
<td>present</td>
<td></td>
</tr>
<tr>
<td>Indwelling urinary catheter present</td>
<td>329 (4.3)</td>
</tr>
</tbody>
</table>
## Prevalence of antimicrobial use

<table>
<thead>
<tr>
<th>State</th>
<th>Number of RACFs</th>
<th>Number of residents surveyed</th>
<th>Prevalence of antimicrobial use n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>17</td>
<td>545</td>
<td>66 (12.1)</td>
</tr>
<tr>
<td>QLD</td>
<td>7</td>
<td>481</td>
<td>31 (6.4)</td>
</tr>
<tr>
<td>SA</td>
<td>8</td>
<td>559</td>
<td>99 (17.7)</td>
</tr>
<tr>
<td>TAS</td>
<td>6</td>
<td>147</td>
<td>19 (12.9)</td>
</tr>
<tr>
<td>VIC</td>
<td>130</td>
<td>4,704</td>
<td>334 (7.1)</td>
</tr>
<tr>
<td>WA</td>
<td>18</td>
<td>1,153</td>
<td>310 (26.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remoteness</th>
<th>Number of RACFs</th>
<th>Number of residents surveyed</th>
<th>Prevalence of antimicrobial use n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Cities</td>
<td>51</td>
<td>2,881</td>
<td>397 (13.8)</td>
</tr>
<tr>
<td>Inner regional</td>
<td>81</td>
<td>3,323</td>
<td>312 (9.4)</td>
</tr>
<tr>
<td>Outer regional</td>
<td>45</td>
<td>1,245</td>
<td>123 (9.9)</td>
</tr>
<tr>
<td>Remote</td>
<td>8</td>
<td>125</td>
<td>25 (20.0)</td>
</tr>
<tr>
<td>Very remote</td>
<td>1</td>
<td>12</td>
<td>2 (16.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provider type</th>
<th>Number of RACFs</th>
<th>Number of residents surveyed</th>
<th>Prevalence of antimicrobial use n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not for profit</td>
<td>37</td>
<td>2,181</td>
<td>426 (19.5)</td>
</tr>
<tr>
<td>Government</td>
<td>141</td>
<td>4,963</td>
<td>395 (8.0)</td>
</tr>
<tr>
<td>Private</td>
<td>8</td>
<td>445</td>
<td>38 (8.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National aggregate</th>
<th>Number of RACFs</th>
<th>Number of residents surveyed</th>
<th>Prevalence of antimicrobial use n (%)</th>
</tr>
</thead>
</table>
Antimicrobials

- 975 prescriptions were recorded for 859 residents

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>% of total antimicrobial prescriptions (n = 975)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication documented</td>
<td>68.4</td>
</tr>
<tr>
<td>Start date documented</td>
<td>64.1</td>
</tr>
<tr>
<td>Review or stop date documented</td>
<td>35.0</td>
</tr>
</tbody>
</table>

- 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 within the 1 week prior to the antimicrobial start date
# Antimicrobials

## Top 5 Antimicrobials prescribed

<table>
<thead>
<tr>
<th>Position</th>
<th>Antimicrobial</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cephalexin (Keflex)</td>
<td>16.7%</td>
</tr>
<tr>
<td>2</td>
<td>Clotrimazole...</td>
<td>16.5%</td>
</tr>
<tr>
<td>3</td>
<td>Amoxycillin-clavulanic...</td>
<td>6.5%</td>
</tr>
<tr>
<td>4</td>
<td>Trimethoprim (Triprim)</td>
<td>6.5%</td>
</tr>
<tr>
<td>5</td>
<td>Chloramphenicol...</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

Topical antimicrobials 30% of all prescriptions
<table>
<thead>
<tr>
<th>Indication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unspecified - Skin, Soft Tissue or...</td>
<td>17.5%</td>
</tr>
<tr>
<td>2. UTI: Cystitis</td>
<td>16.7%</td>
</tr>
<tr>
<td>3. LRTI (pneumonia, chest infection)</td>
<td>11.8%</td>
</tr>
<tr>
<td>4. Tinea</td>
<td>8.4%</td>
</tr>
<tr>
<td>5. Indication Unknown</td>
<td>5.5%</td>
</tr>
<tr>
<td>6. Conjunctivitis</td>
<td>5.2%</td>
</tr>
<tr>
<td>7. Wound infection: non-surgical</td>
<td>4.6%</td>
</tr>
<tr>
<td>8. Cellulitis</td>
<td>4.4%</td>
</tr>
<tr>
<td>9. Asymptomatic bacteriuria</td>
<td>2.6%</td>
</tr>
<tr>
<td>10. Unspecified - Respiratory Tract</td>
<td>2.1%</td>
</tr>
<tr>
<td>11. Unspecified - Urinary Tract</td>
<td>1.8%</td>
</tr>
<tr>
<td>12. Abscess/Boils/Folliculitis</td>
<td>1.1%</td>
</tr>
<tr>
<td>13. Unspecified - Eye</td>
<td>1.1%</td>
</tr>
<tr>
<td>14. Infective exacerbation of COPD</td>
<td>1.0%</td>
</tr>
<tr>
<td>15. Bronchitis</td>
<td>1.0%</td>
</tr>
<tr>
<td>16. Oral/Oesophageal candidiasis</td>
<td>0.9%</td>
</tr>
<tr>
<td>17. Unspecified - Bone and Joint</td>
<td>0.8%</td>
</tr>
<tr>
<td>18. Osteomyelitis</td>
<td>0.8%</td>
</tr>
<tr>
<td>19. Common cold</td>
<td>0.8%</td>
</tr>
<tr>
<td>20. Unspecified - Medical Prophylaxis</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

36% skin/soft tissue  
21% urinary tract  
17% respiratory tract
10 most common **treatment** indications (752 prescriptions)

1. Unspecified - Skin, Soft Tissue or Mucosal: 19.4%
2. LRTI (pneumonia, chest infection): 14.4%
3. UTI: Cystitis: 10.9%
4. Tinea: 9.7%
5. Conjunctivitis: 6.3%
6. Indication Unknown: 5.7%
7. Wound infection: non-surgical: 5.5%
8. Cellulitis: 4.9%
9. Unspecified - Respiratory Tract: 2.3%
10. Asymptomatic bacteriuria: 2.1%

10 most common **prophylaxis** indications (223 prescriptions)

1. UTI: Cystitis: 36.3%
2. Unspecified - Skin, Soft Tissue or Mucosal: 11.2%
3. Unspecified - Urinary Tract: 5.4%
4. Indication Unknown: 4.9%
5. Asymptomatic bacteriuria: 4.0%
6. Tinea: 4.0%
7. Unspecified - Medical Prophylaxis: 3.6%
8. LRTI (pneumonia, chest infection): 3.1%
9. Cellulitis: 2.7%
10. Bronchiectasis: 1.8%
Microbiology

Percentage of prescriptions with microbiological samples taken, by body system

<table>
<thead>
<tr>
<th>Body System</th>
<th>Micro collected</th>
<th>Micro not collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin, Soft Tissue or Mucosal (194)</td>
<td>15.5%</td>
<td>84.5%</td>
</tr>
<tr>
<td>Respiratory Tract (149)</td>
<td>10.7%</td>
<td>89.3%</td>
</tr>
<tr>
<td>Urinary Tract (105)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye (50)</td>
<td>6.0%</td>
<td>94.0%</td>
</tr>
</tbody>
</table>

Micro collected

Micro not collected
## Prevalence of infections

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

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

- Urinary tract: 100 infections, 2 McGeer confirmed
- Respiratory tract: 139 infections, 61 McGeer confirmed
- Skin, soft tissue, eye, oral: 128 infections, 63 McGeer confirmed
- Gastrointestinal tract: 3 infections, 0 McGeer confirmed
- Systemic: 1 infection, 0 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 or 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
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)
<table>
<thead>
<tr>
<th>Partners</th>
<th>Roles</th>
</tr>
</thead>
</table>
| 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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Prof Frank Dunshea (Animal)
Prof Danielle Mazza (General Practice)
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