

# National Alert System for Critical Antimicrobial Resistances (CARAlert)

A highlight of carbapenemase-producing organisms in Australia

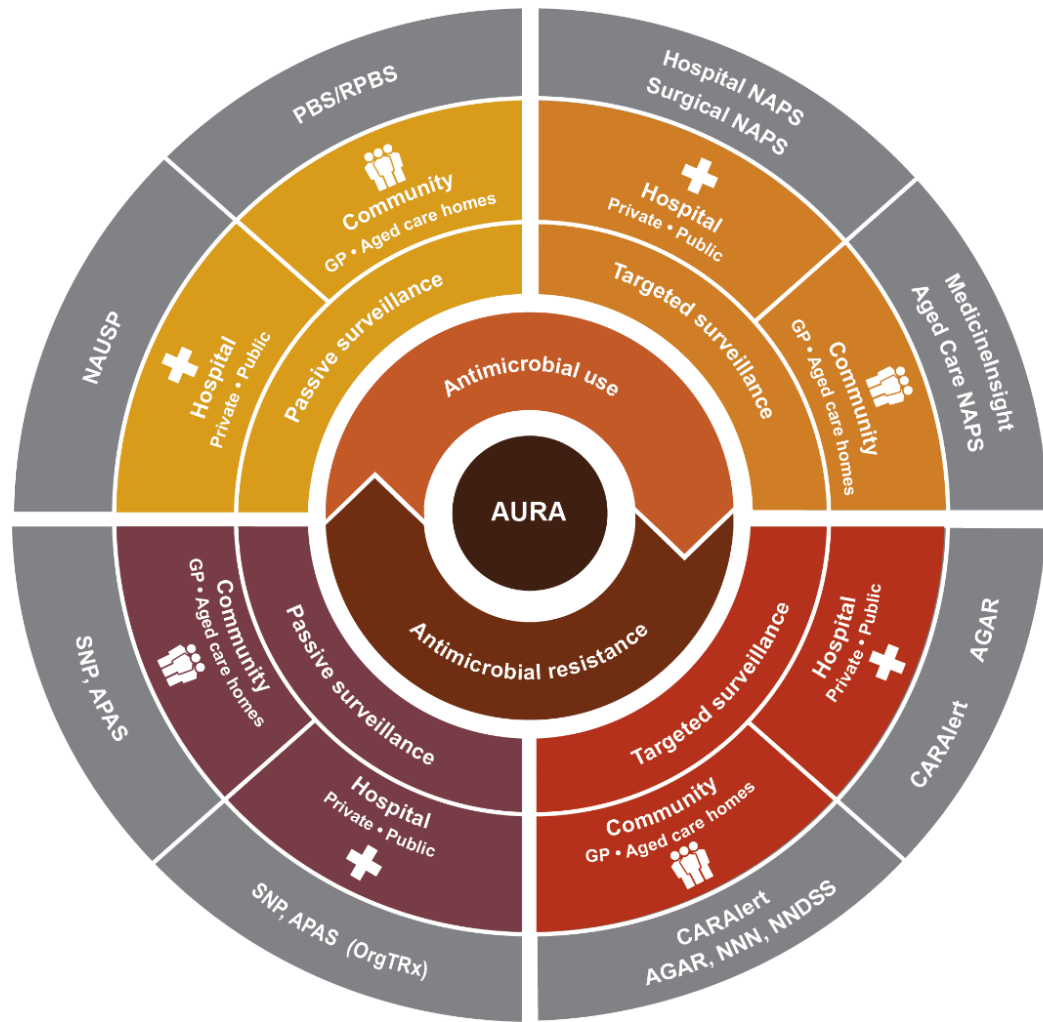
Brigid Carey, Manager, AURA Project

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

# Disclosure of Interest Statement

I have no disclosures or conflicts.

# Antimicrobial Use and Resistance in Australia (AURA)



# National Alert System for Critical Antimicrobial Resistances (CARAlert)

## Critical Antimicrobial Resistances (CARs)

- Priority organism for national reporting
- Serious threat to last-line antimicrobial agents
- Strongly associated with resistance to other antimicrobial classes
- At low prevalence in, or currently absent from, Australia and potentially containable
- Data not otherwise collected nationally in a timely way

Over 15,000 reports to CARAlert since 2016

# CARAlert

## **Based on routine laboratory processes**

1. Collection and routine testing by the originating laboratory
2. Confirmation by a confirming laboratory that has the capacity to confirm the CAR
3. Reporting to the health service and clinicians in accordance with usual processes between the confirming and originating laboratories
4. Submission of the resistance and organism by the confirming laboratory to CARAlert via the secure web portal

Species	Critical resistance
<i>Acinetobacter calcoaceticus-baumannii</i> complex	Carbapenemase-producing
<i>Candida auris</i>	-
<i>Enterobacterales</i>	Carbapenemase-producing, and/or ribosomal methyltransferase-producing Transmissible colistin resistance
<i>Enterococcus</i> species	Linezolid-resistant
<i>Mycobacterium tuberculosis</i>	Multidrug-resistant (resistant to at least rifampicin and isoniazid)
<i>Neisseria gonorrhoeae</i>	Ceftriaxone-nonsusceptible or azithromycin-nonsusceptible Gentamicin-resistant
<i>Neisseria meningitidis</i>	Ciprofloxacin-nonsusceptible
<i>Pseudomonas aeruginosa</i>	Carbapenemase-producing
<i>Salmonella</i> species	Ceftriaxone-nonsusceptible
<i>Shigella</i> species	Multidrug-resistant
<i>Staphylococcus aureus</i> complex	Vancomycin-, or linezolid-nonsusceptible
<i>Streptococcus pyogenes</i>	Penicillin reduced susceptibility

AUSTRALIAN COMMISSION  
ON SAFETY AND QUALITY IN HEALTH CARE



May 2024

**CARAlert annual report**  
2023



# A highlight of carbapenemase-producing organisms (CPOs) in Australia:

- *Acinetobacter calcoaceticus-baumannii* complex
- *Pseudomonas aeruginosa*
- *Enterobacterales* (CPE)



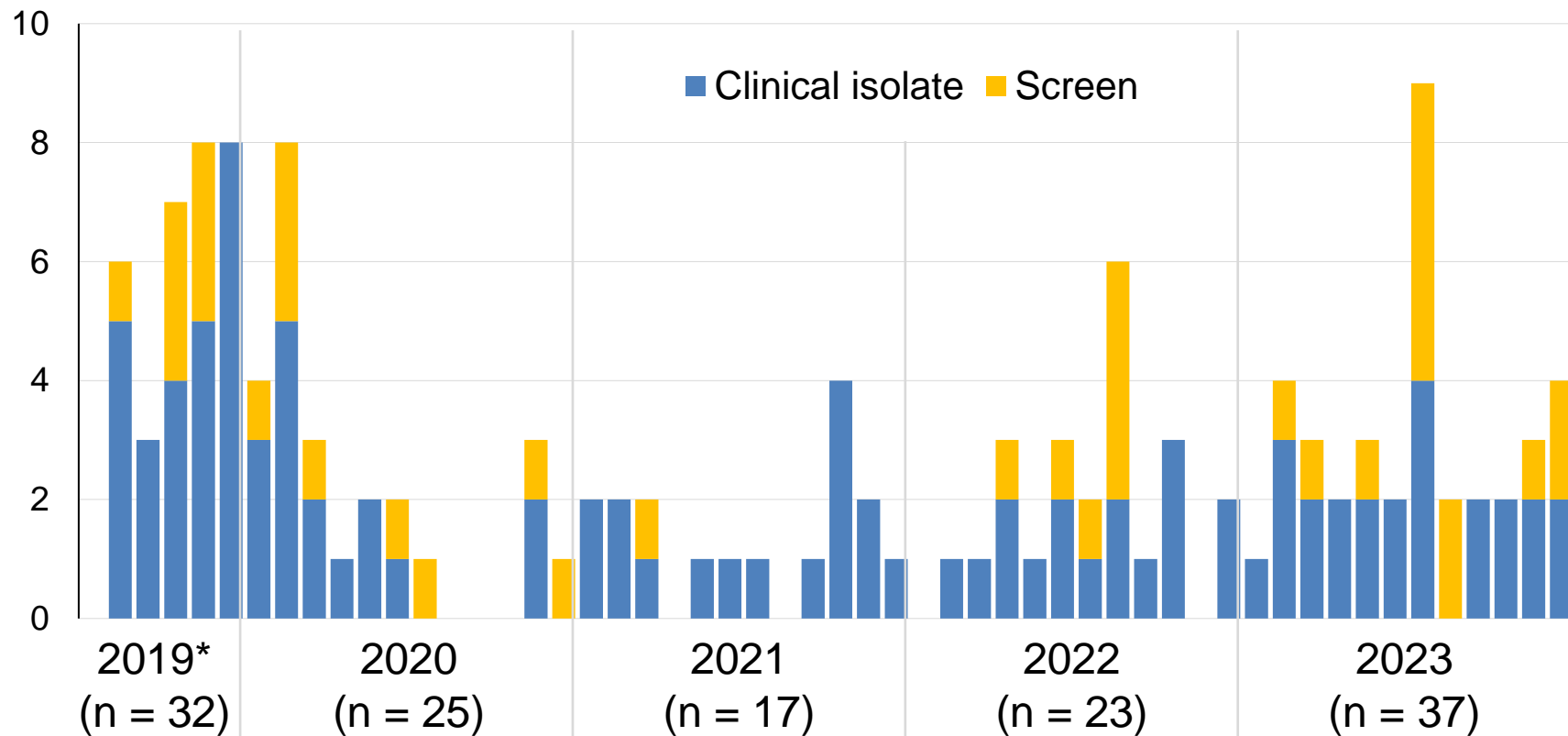
# Carbapenemase-producing organisms

Number reported to CARAlert by setting, national, 2023

	Hospital**	% Hospital**	Aged care home	Community	Unknown	Total
<i>A. calcoaceticus-baumannii</i> complex	36	97%	0	1	0	<b>37</b>
<i>P. aeruginosa</i> *	56	75%	0	22	5	<b>75</b>
<i>Enterobacterales</i> *	1,009	84%	8	135	53	<b>1,205</b>
<b>TOTAL CPOs</b>	<b>1,101</b>	<b>84%</b>	<b>8</b>	<b>157</b>	<b>58</b>	<b>1,317</b>
<b>TOTAL CARs</b>	<b>1,387</b>	<b>52%</b>	<b>8</b>	<b>849</b>	<b>442</b>	<b>2,686</b>

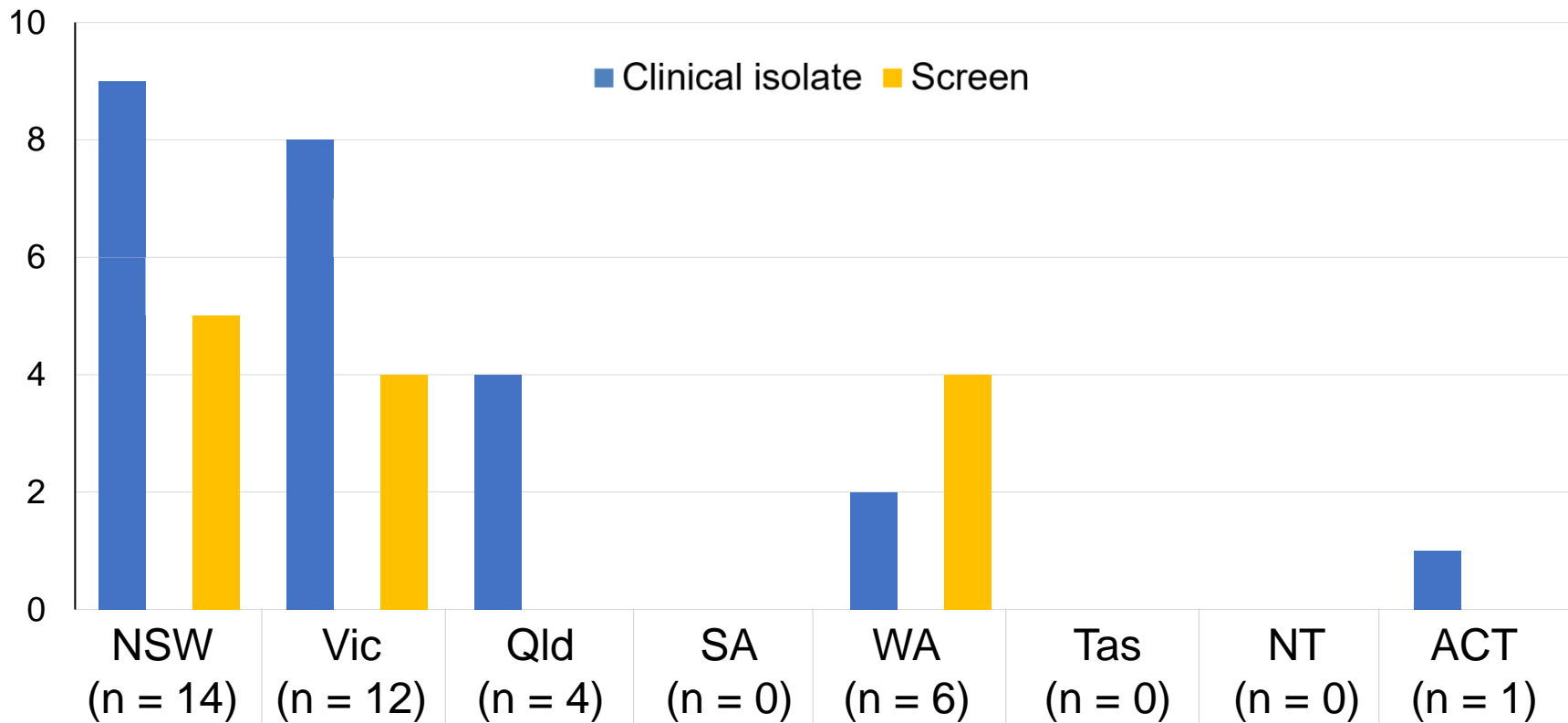
# *Acinetobacter baumannii* complex

Number reported to CARAlert by specimen type, national, 2019\*–2023



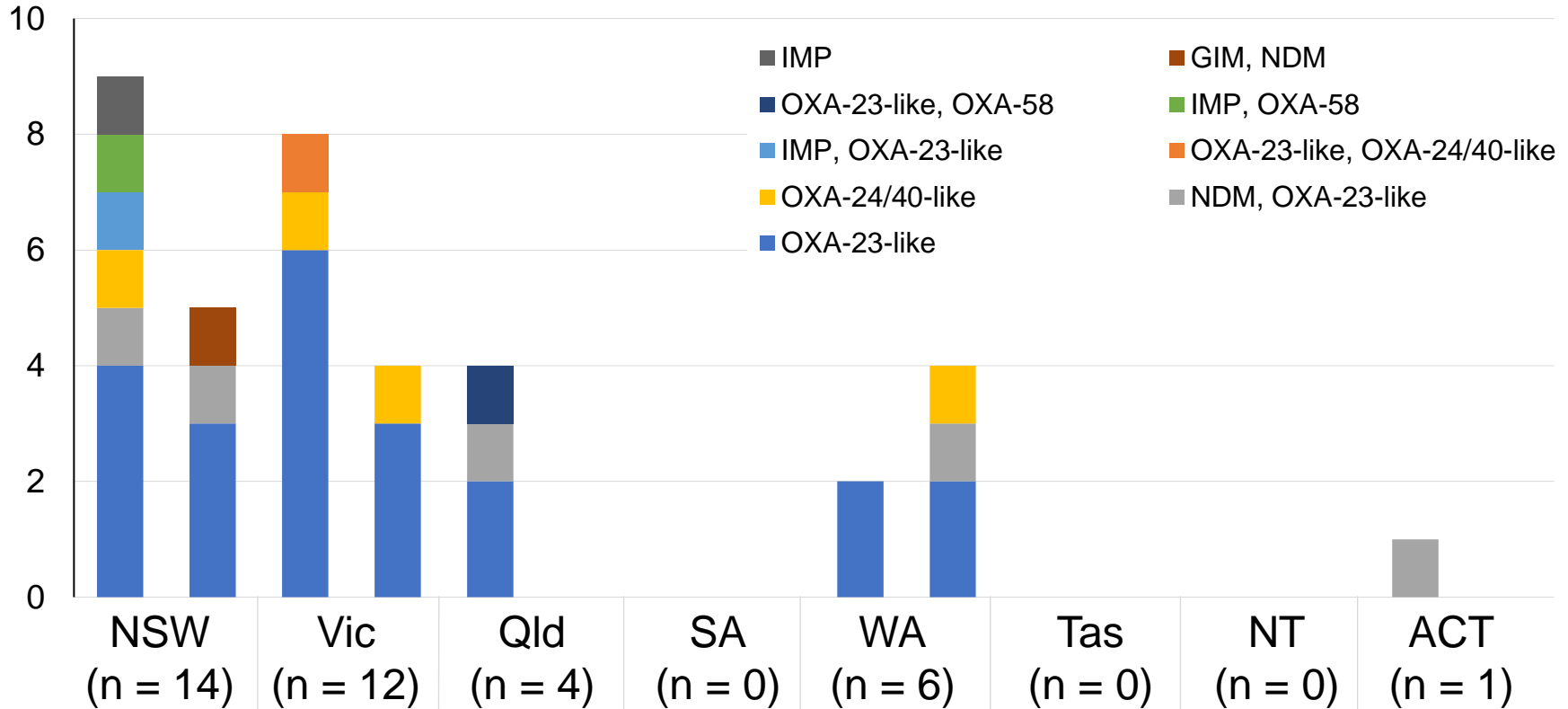
# *Acinetobacter baumannii* complex

Number reported to CARAlert by specimen type, state and territory, 2023



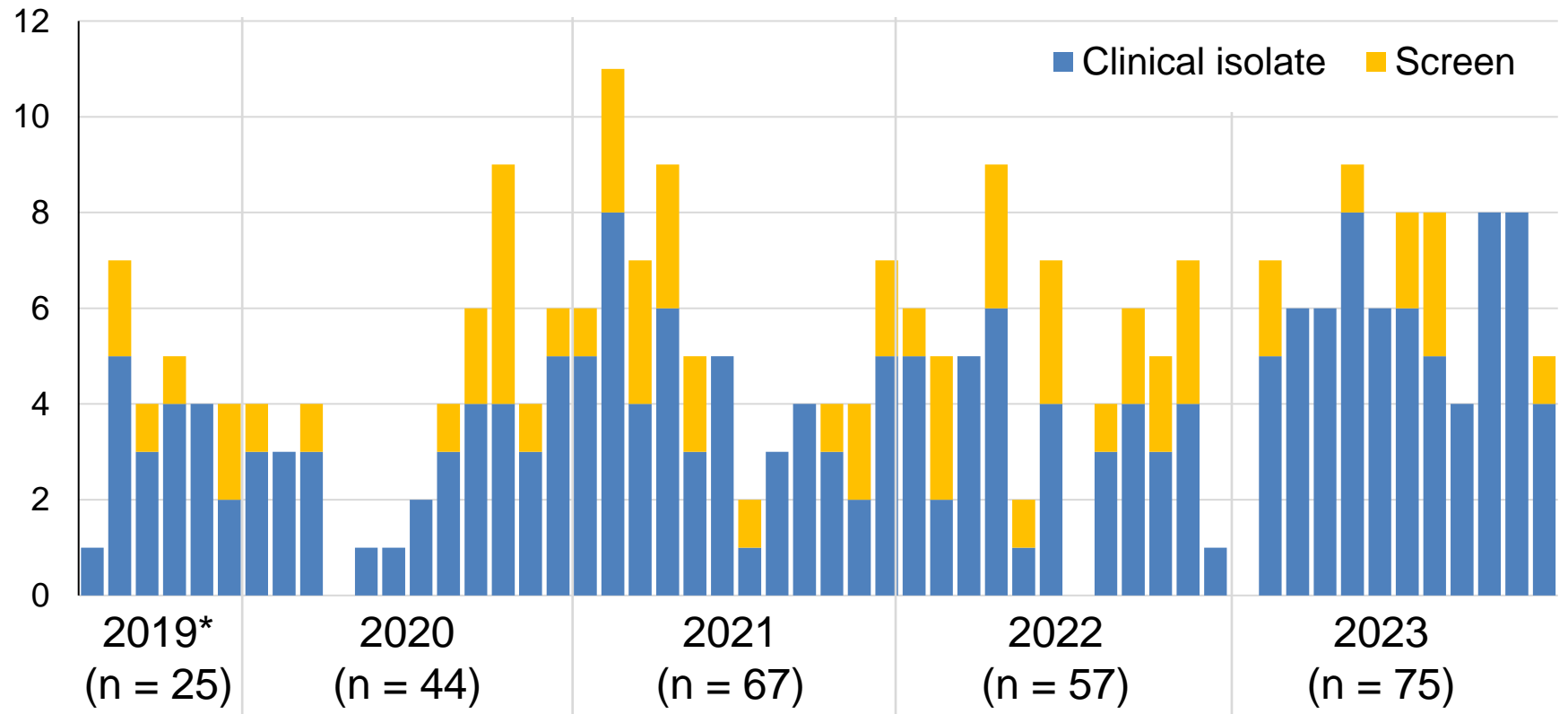
# *Acinetobacter baumannii* complex

Number reported to CARAlert by carbapenemase type, specimen type, state and territory, 2023



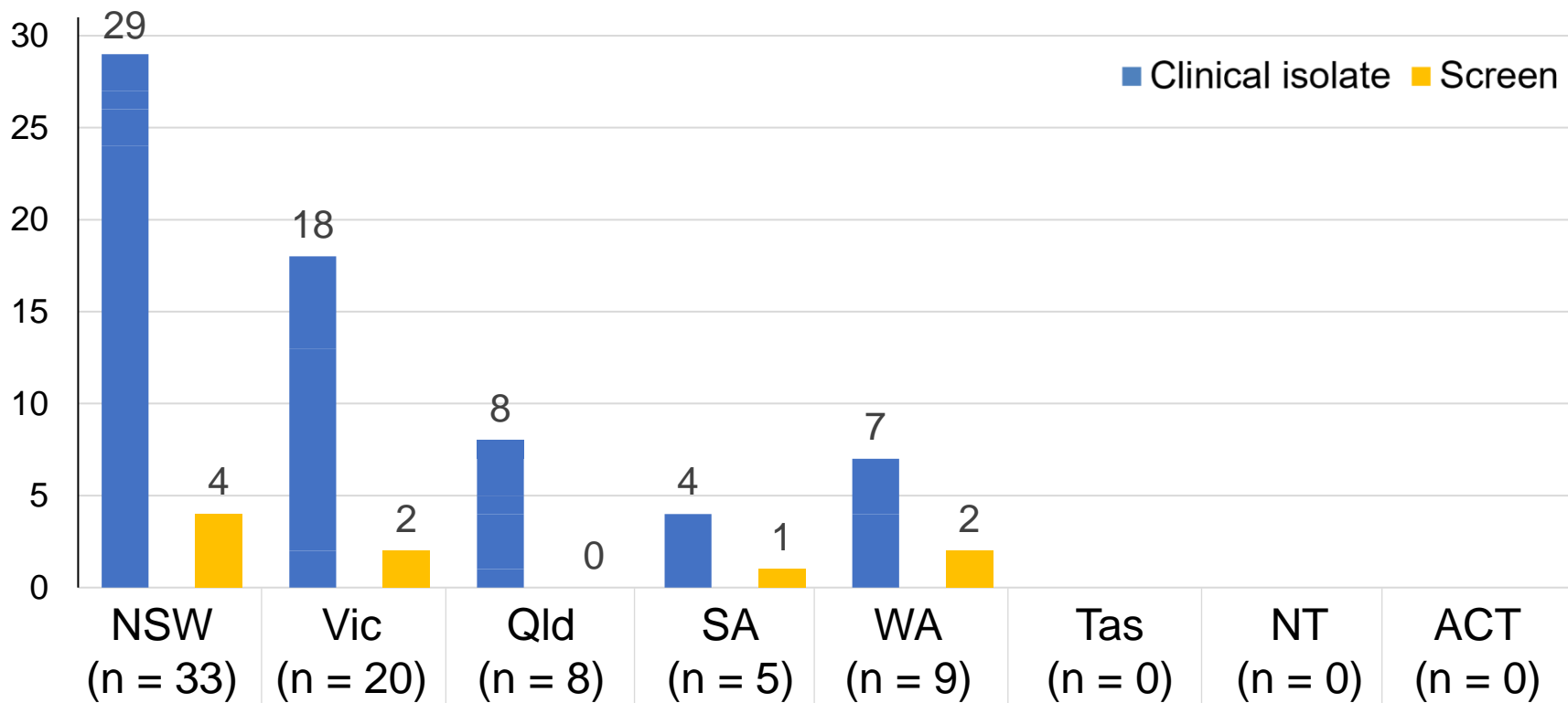
# *Pseudomonas aeruginosa*

## Number reported to CARAlert by specimen type, national, 2019\*–2023



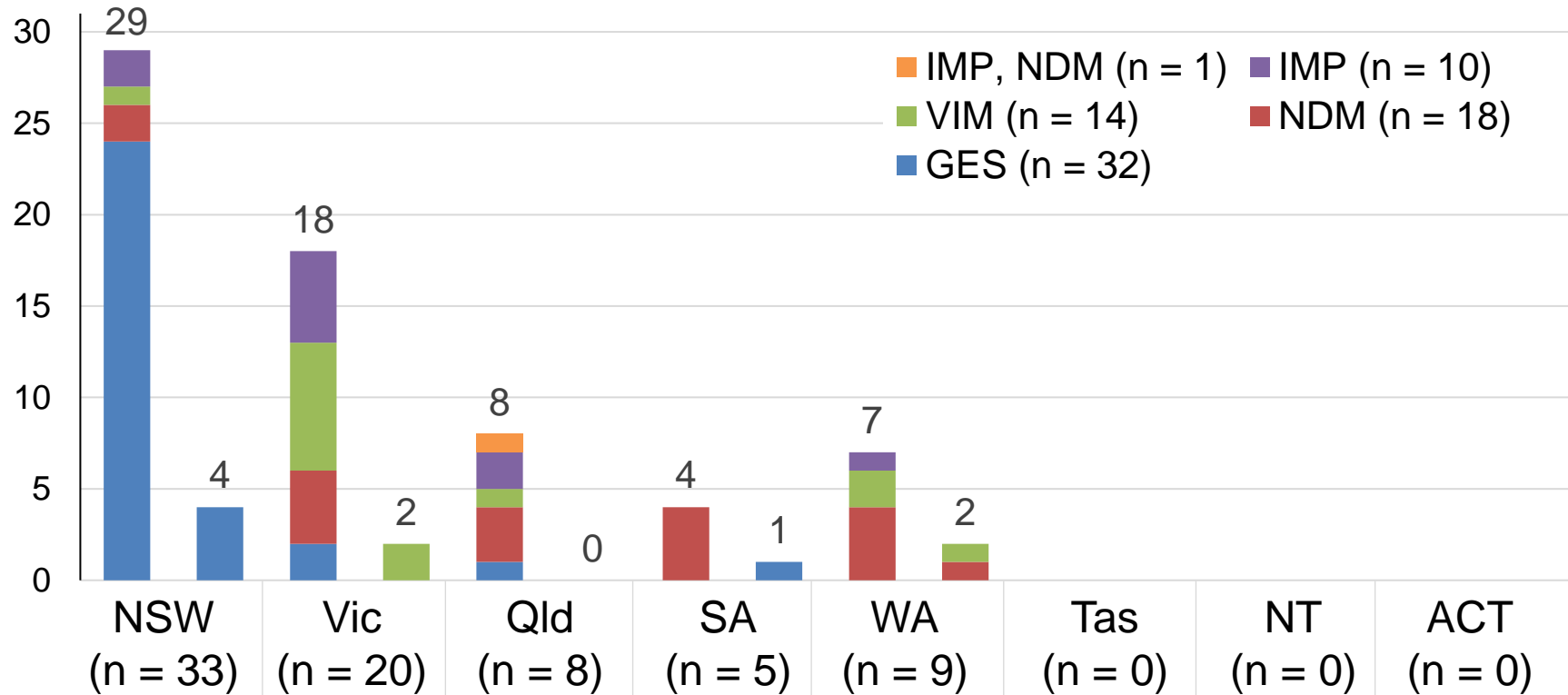
# *Pseudomonas aeruginosa*

Number reported to CARAlert by specimen type, state and territory, 2023



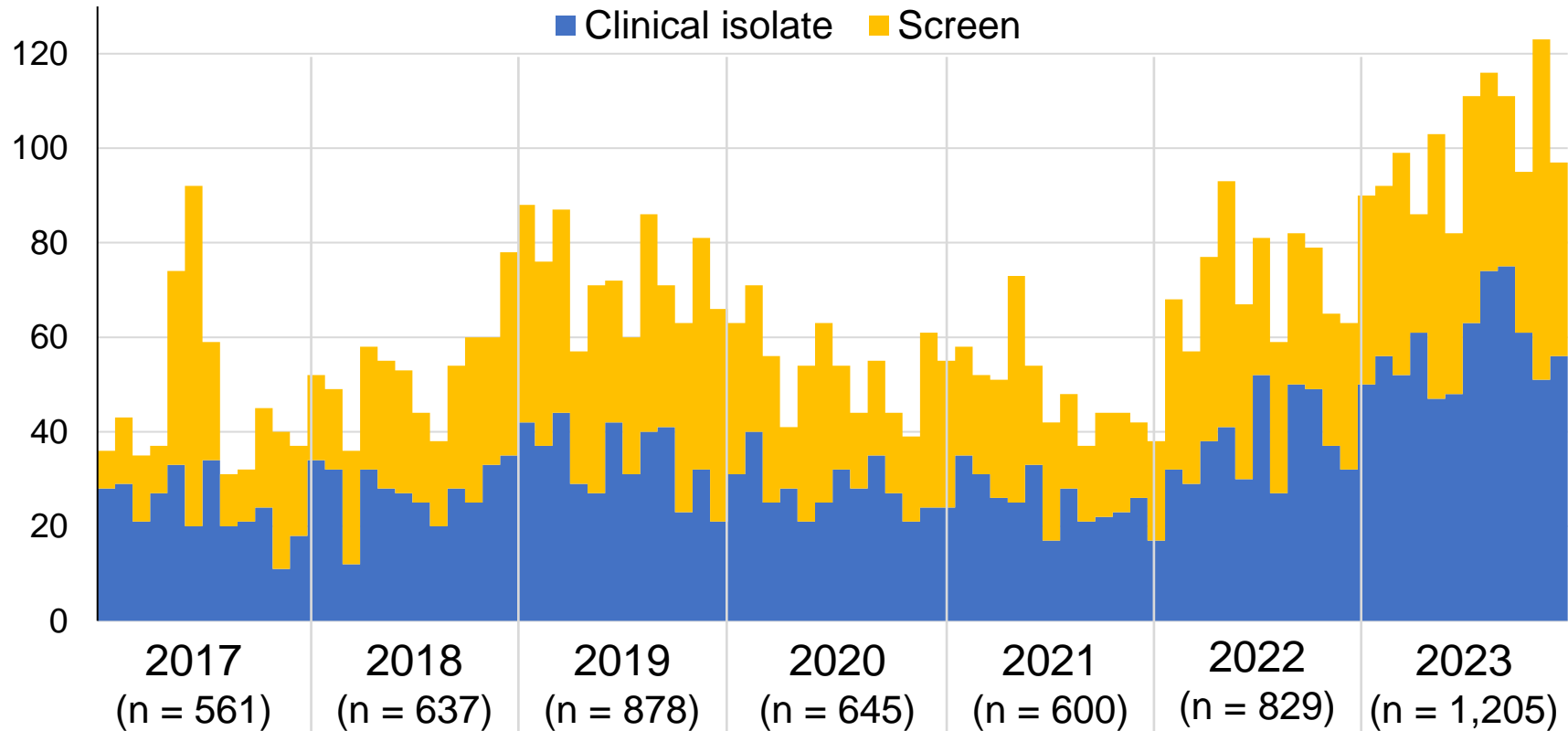
# *Pseudomonas aeruginosa*

Number reported to CARAlert by carbapenemase type, specimen type, state and territory, 2023



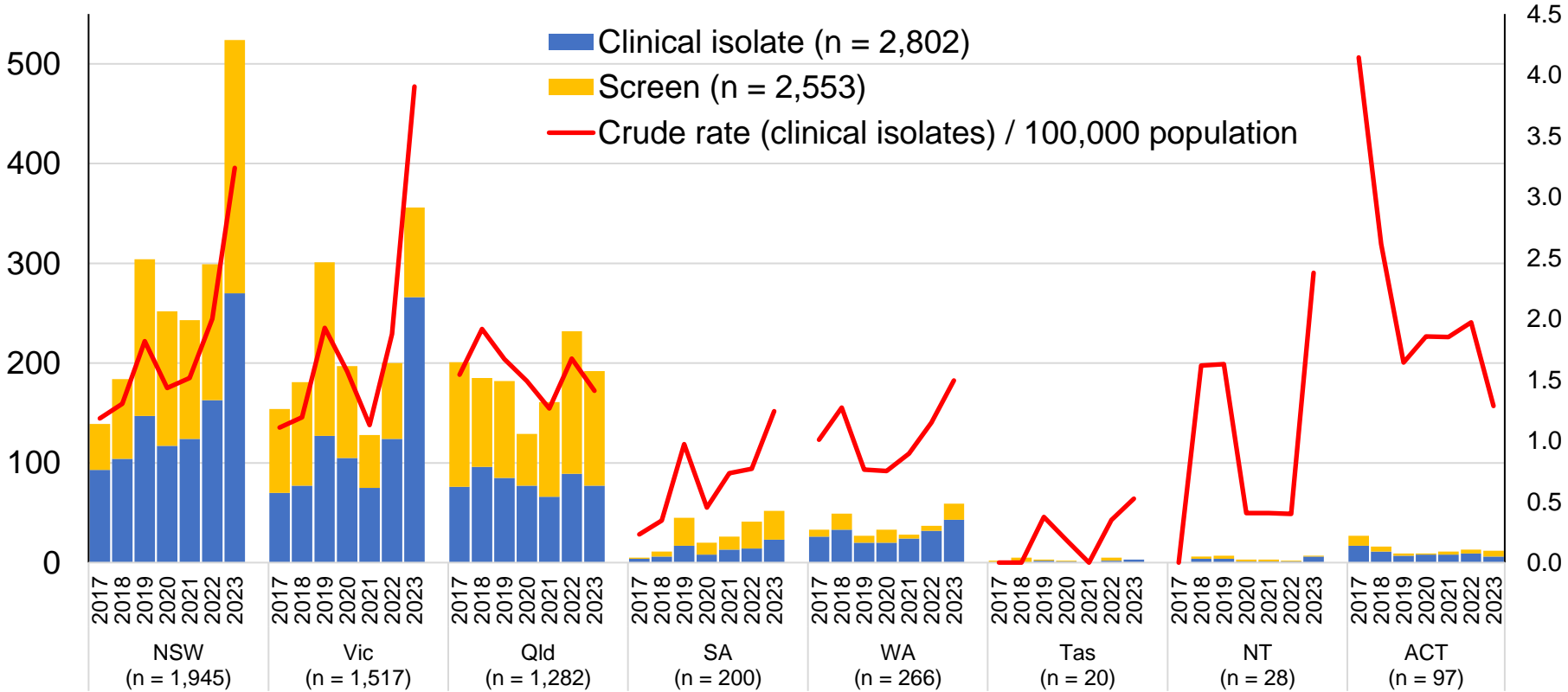
# Enterobacterales

## Number reported to CARAlert by specimen type, national, 2017–2023



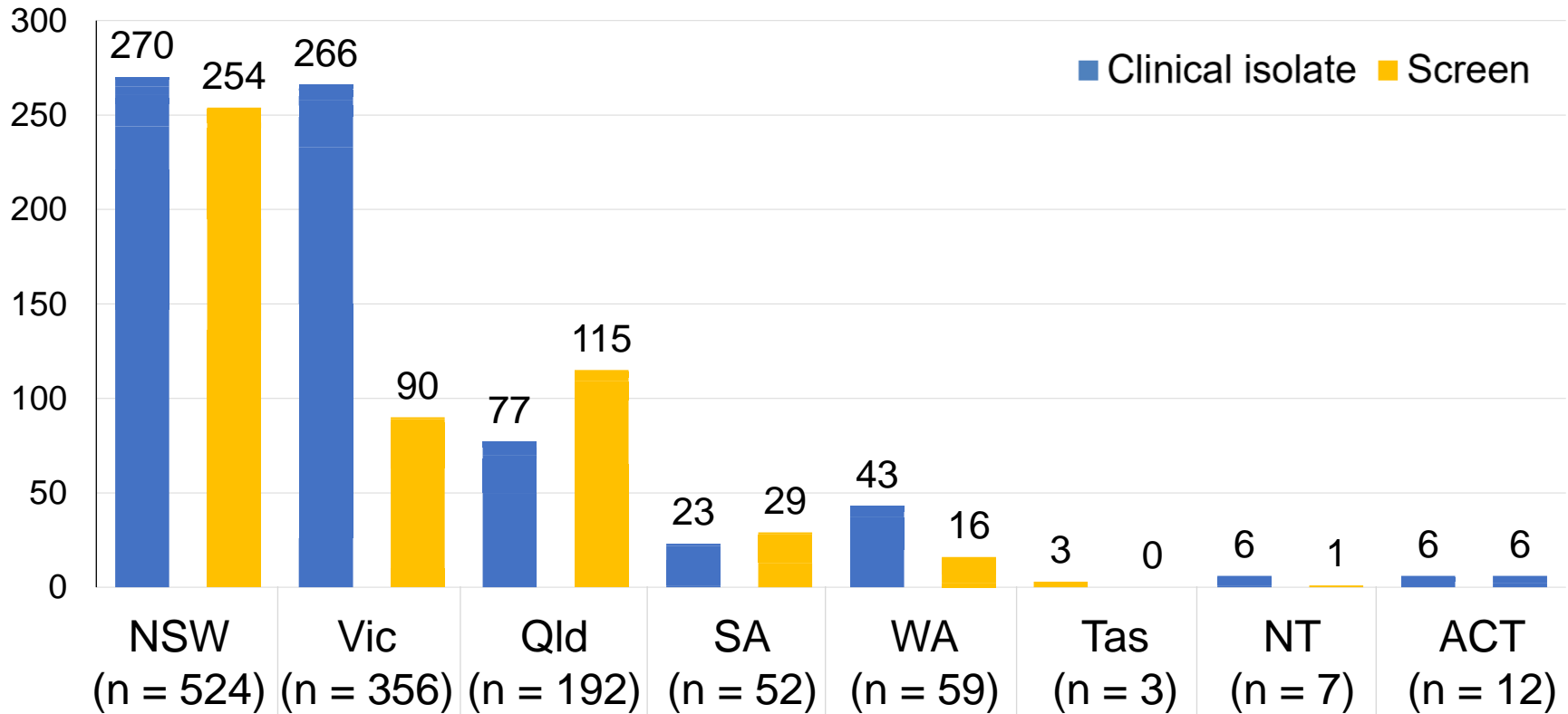
# Enterobacteriales

## Number reported to CARAlert by specimen type, state and territory, 2017–2023



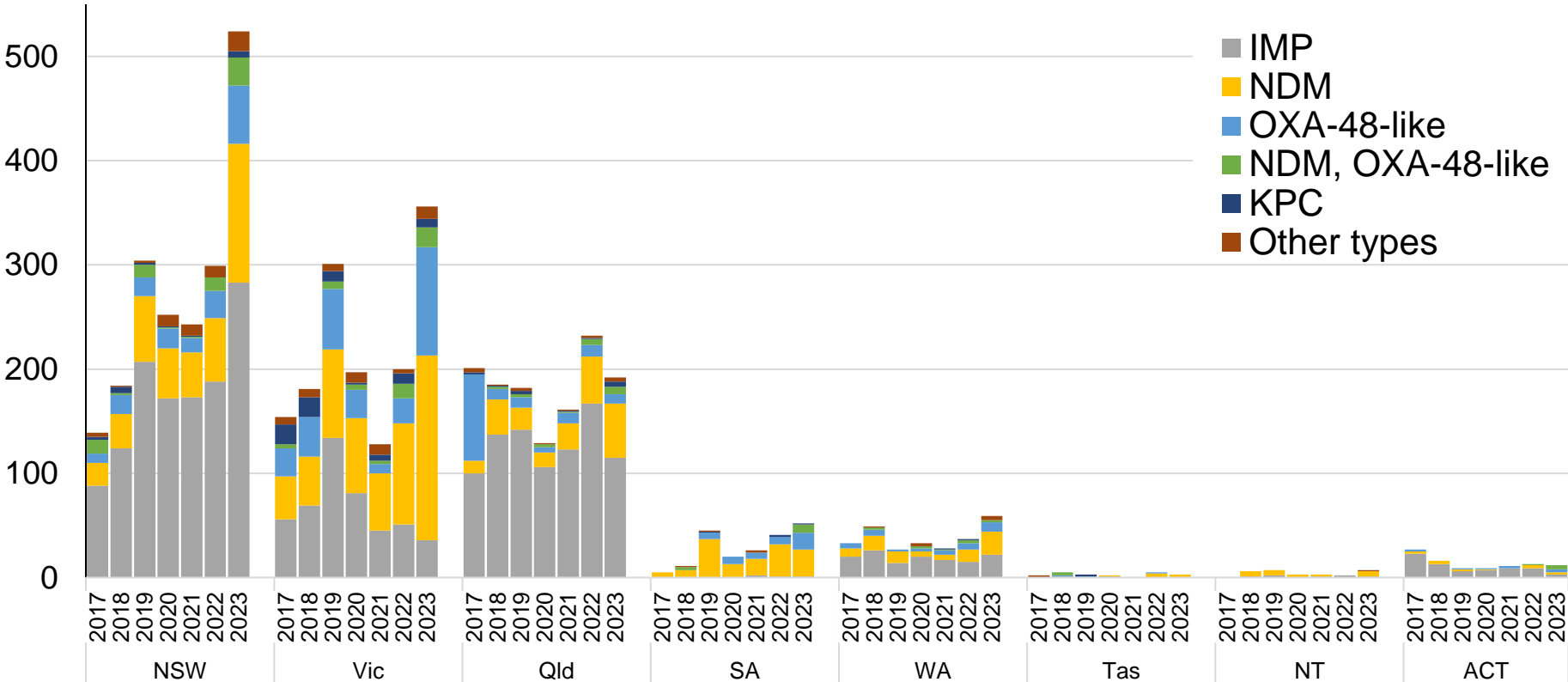
# Enterobacterales

## Number reported to CARAlert by specimen type, state and territory, 2023



# Enterobacterales

## Number reported to CARAlert by carbapenemase type, state and territory, 2023



# Conclusions and actions

- IPC guidance for CPOs
- Opportunities for national HAI surveillance
- Transition to the independent Australian CDC
- Available and accessible data – essential for IPC



**[safetyandquality.gov.au/AURA](https://safetyandquality.gov.au/AURA)**  
**[safetyandquality.gov.au/CARAlert](https://safetyandquality.gov.au/CARAlert)**



**[X.com/ACSQHC](https://X.com/ACSQHC)**



**[Youtube.com/ACSQHC](https://Youtube.com/ACSQHC)**



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

