



MDRO Data Overview and HAI Updates

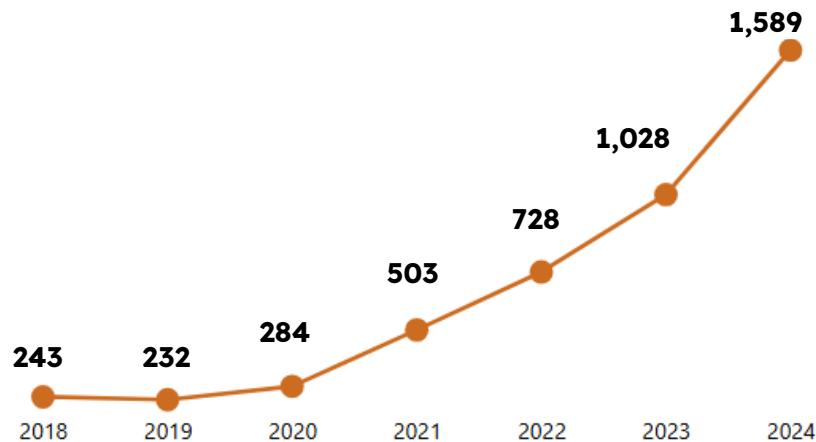
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Arizona Department of Health Services
Office of Healthcare-Associated Infections



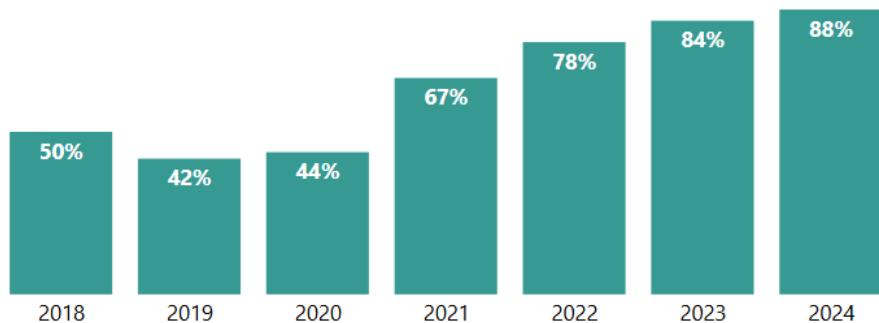
Carbapenem- Resistant Enterobacteriales

Carbapenem-resistant Enterobacteriales (CRE)

5-year median CRE case counts: **503**

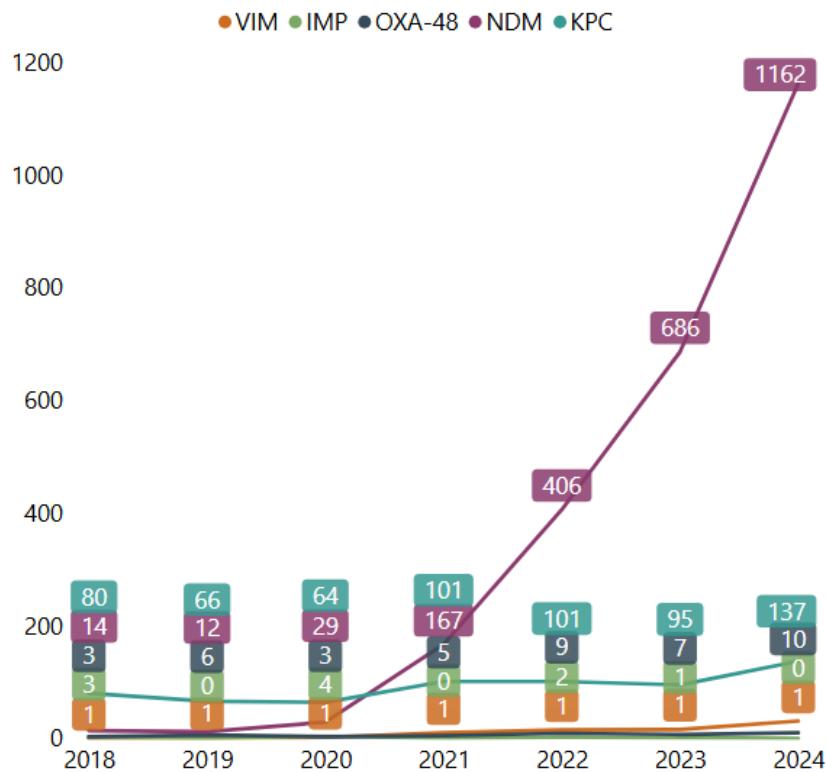


Confirmed and probable CRE cases are increasing each year - by **55%** in 2024 compared to 2023



Percentage of carbapenemase-producing CRE cases by year, with a **4%** increase from 2023 to 2024

CRE Resistance Mechanisms



Carbapenemases of Interest

NDM - New Delhi Metallo- β -Lactamase

KPC - *Klebsiella pneumoniae* Carbapenemase

OXA-48 - Oxacillinase-48-like

VIM - Verona Integron-Encoded Metallo- β -Lactamase

IMP - Imipenemase

Note:

Cases can be counted in multiple categories.

For example, a case could have both NDM and KPC.

CRE Resistance Mechanisms by Species

2024



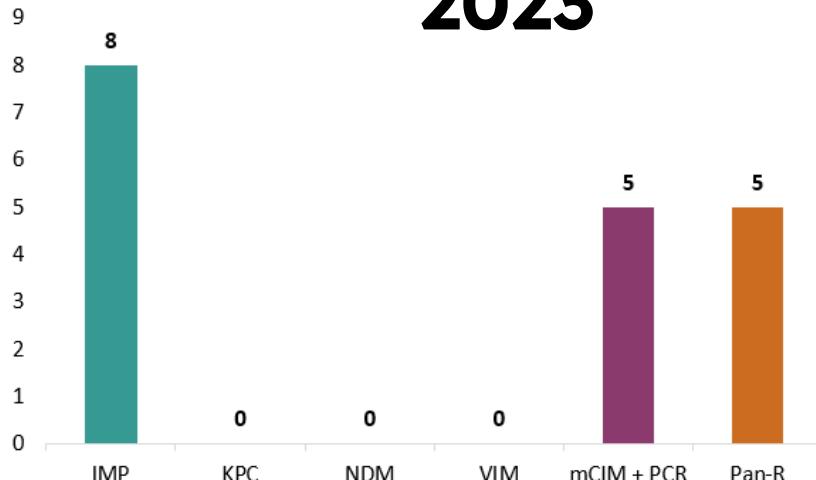
● *E. coli* ● *Enterobacter spp.* ● *Klebsiella spp.* ● *Other Enterobacteriaceae* ● *Unknown*



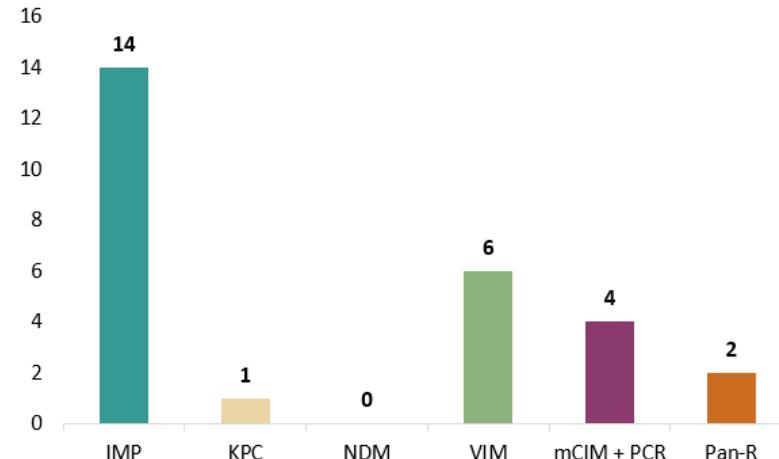
Carbapenem- resistant *Pseudomonas* *aeruginosa*

Carbapenem-Resistant *Pseudomonas aeruginosa* (CRPA)

2023



2024



Notes:

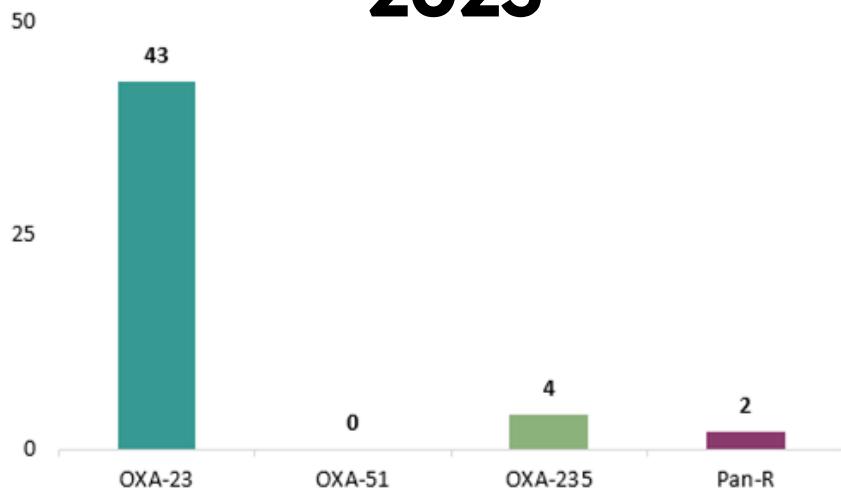
- Cases can be counted in more than one category (e.g. pan-R and IMP)
 - Pan-R is defined as resistant to all antimicrobials included in the ARLN reports
- Carbapenemase-producing CRPA and pan-resistant CRPA are reportable and must be sent to ASPHL
- Facilities voluntarily submit other CRPA isolates to ASPHL additional testing



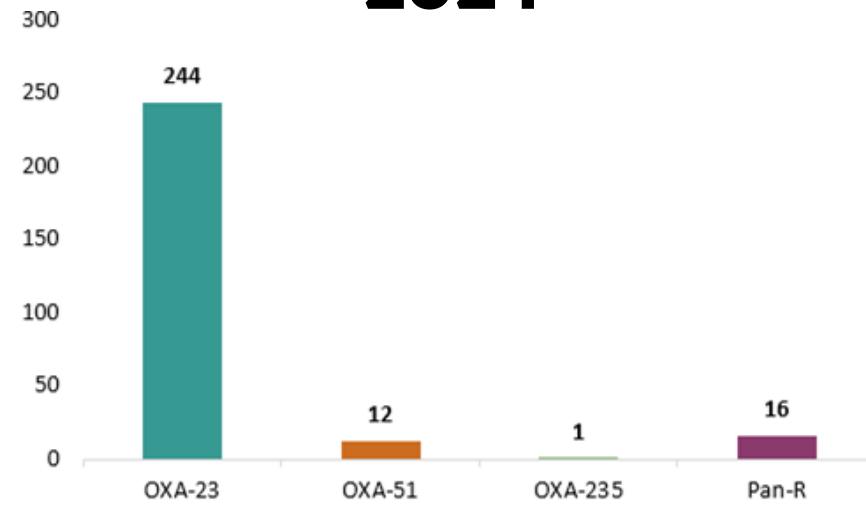
Carbapenem- resistant *Acinetobacter baumannii*

Carbapenem-Resistant *Acinetobacter baumannii* (CRAB)

2023



2024



Notes:

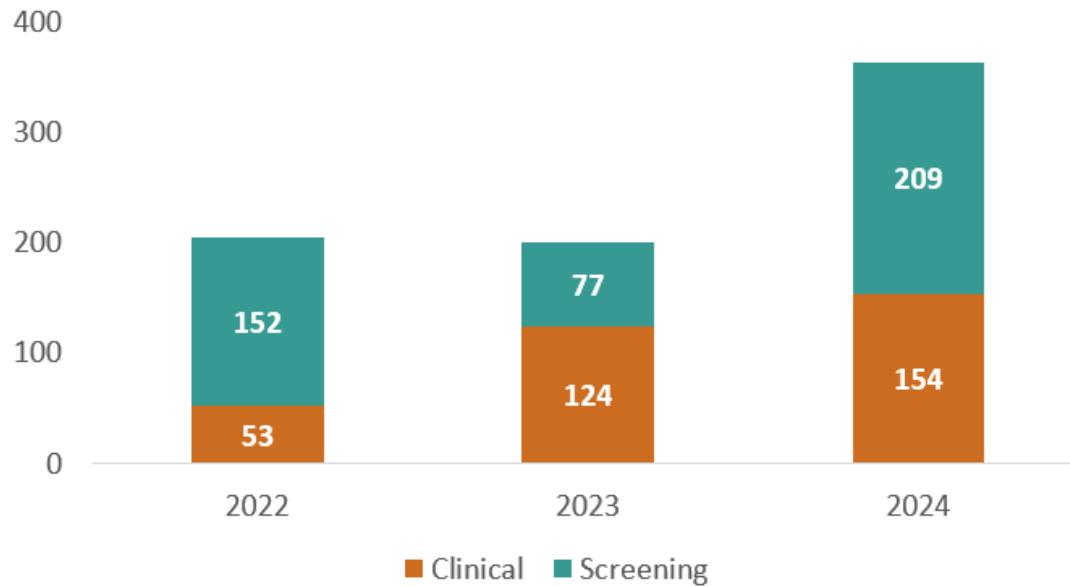
- Cases can be counted in more than one category (e.g. pan-R and OXA-23)
 - Pan-R is defined as resistant to all antimicrobials included in the ARLN reports
- Carbapenemase-producing CRAB and pan-resistant CRAB are reportable and must be sent to ASPHL
- Facilities voluntarily submit other CRAB isolates to ASPHL additional testing



Candida auris

Candida auris

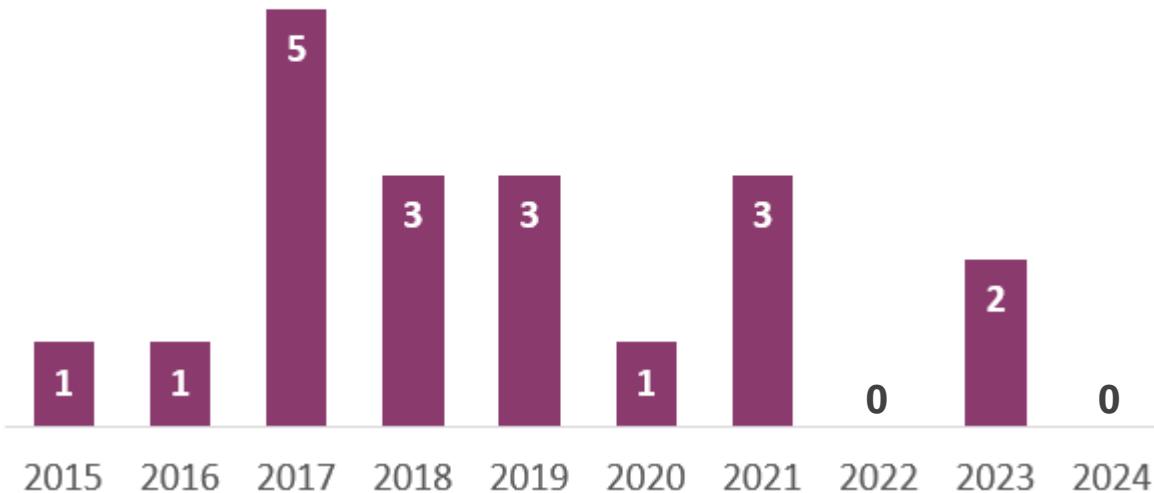
Number of clinical and screening *C. auris* cases by year, with **24% increase in 2024 among clinical cases** compared to 2023





Vancomycin intermediate/resistant non-susceptible *Staphylococcus aureus* (VISA/VRSA)

VISA/VRSA



19

VISA isolates
have been
detected in AZ
since 2015

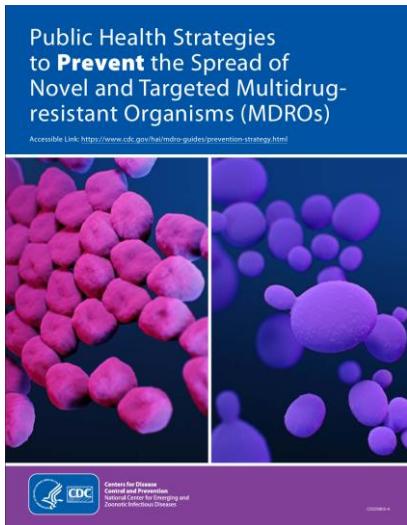
0

VRSA isolates
have been
detected in AZ
since 2015



HAI Updates

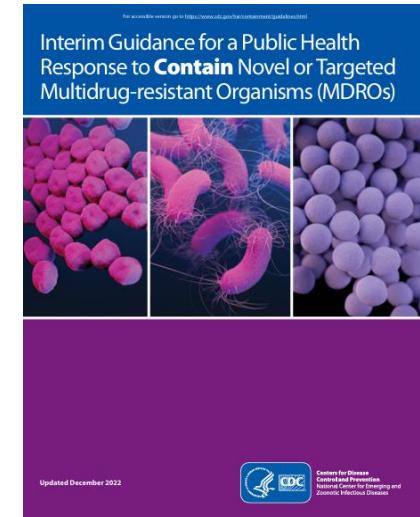
CDC MDRO Prevention and Containment Strategy



CDC MDRO Containment vs. Prevention Strategy:

- Prevention Strategy:**
Aims to reduce the emergence and transmission of MDROs through proactive measures like improving general infection prevention and control (IPC) practices and having a prevention plan in place.
- Containment Strategy:**
Focuses on immediate actions to stop the spread of MDROs, including patient isolation, cohorting, and enhanced infection control practices.

Figure 1. Relationship between epidemic stages, response tiers, containment response, and prevention activities for novel or targeted MDROs.



ADHS MDRO Statewide Response Tiers

Tier 1	Tier 2	Tier 3	Tier 4
No cases	Limited to Moderate Spread	Advanced Spread	Endemicity
Organisms or resistance mechanisms that have never (or very rarely) been identified in the United States	Pan-not susceptible and pan-resistant organisms		
	VRSA*		
	CP-CRE** with IMP, VIM, OXA-48		
	<i>Candida auris</i>		
	CP- <i>Pseudomonas aeruginosa</i> ***		
	CP- <i>Acinetobacter baumannii</i> ***		
	CP-CRE** with NDM, KPC		

In partnership with ADHS, county and tribal health departments are encouraged to evaluate their local epidemiology to determine the most appropriate tiers & epidemiologic stages for their region based on the following considerations:

- Case counts & clusters from the last 6-12 months
- Patient network of cases/clusters
- Local resources and capacity

Statewide Interfacility Notification Form

- This form was modified from the CDC's [Interfacility Infection Control Transfer Form](#)
- Last updated: January 2024
- How to use this form
 - Place form on top of patient's transfer paperwork.
 - Save the electronic version of this form or equivalent information, in the patient's EMR.
 - Use this form to document verbal interfacility notifications

 ARIZONA DEPARTMENT OF HEALTH SERVICES

Required Notification of Interfacility Transfers
Infection Control Transfer Form

Patient Name:		
Patient Date of Birth:		
Medical Record Number:		
Date of Transfer:		
Originating Facility:		
Was the patient in Transmission-Based Precautions (TBP) on the date of transfer?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, specify type(s) of precautions:	<input type="checkbox"/> Contact <input type="checkbox"/> Droplet <input type="checkbox"/> Airborne <input type="checkbox"/> Enhanced Barrier	
Infectious Agent	Active Infection (Check if "Yes")	Colonization (Check if "Yes")
<i>Acinetobacter</i> , multidrug-resistant	<input type="checkbox"/>	<input type="checkbox"/>
<i>Candida auris</i> (C. auris)	<input type="checkbox"/>	<input type="checkbox"/>
Carbapenem-resistant <i>Enterobacteriales</i> (CRE)	<input type="checkbox"/>	<input type="checkbox"/>
<i>Clostridioides difficile</i> (C. diff)	<input type="checkbox"/>	<input type="checkbox"/>
Extended Spectrum Beta-Lactamase (ESBL) - producing <i>Enterobacteriales</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Methicillin</i> -resistant <i>Staphylococcus aureus</i> (MRSA)	<input type="checkbox"/>	<input type="checkbox"/>
<i>Pseudomonas aeruginosa</i> , multidrug-resistant	<input type="checkbox"/>	<input type="checkbox"/>
Vancomycin-resistant <i>Enterococcus</i> (VRE)	<input type="checkbox"/>	<input type="checkbox"/>
Vancomycin-intermediate/resistant <i>Staphylococcus aureus</i> , (VISA/VRSA)	<input type="checkbox"/>	<input type="checkbox"/>
Other active communicable disease (including MDRO infections, MDR-TB, XDR-TB, etc), please specify: <i>And/or date of symptom onset:</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> No known active communicable disease		
Additional comments:		
Staff completing form:		
Print Name: _____	Email: _____	Phone: _____
Signature: _____ Date: _____		

Note: *Requirement of interfacility transfer notification is outlined in Arizona Administrative Code Article 3, R9-6-302, and in the CMS LTC Appendix PP of the State Operations Manual (433.30).





Thank you!

Please reach out to HAI@azdhs.gov for any questions or concerns.