HAI/AR Newsletter Special Edition: Multidrug-Resistant Organism (MDRO) Prevention and Containment

October 2025

This special edition highlights how healthcare and public health in Virginia are working together to prevent antimicrobial-resistant infections and protect patients/residents and staff in the commonwealth.

In this Newsletter:

- MDROs in Virginia: A Growing Challenge, A Shared Responsibility
- Virginia MDRO Data Snapshots & Emerging Trends
- High Priority Pathogens Require High-Impact Response
- Power of Partnerships: Coordinated Roles in Targeted MDRO Defense
- What to Expect with a Targeted MDRO Investigation
- Everyday Actions, Lifesaving Impact: Basic Infection Prevention Practices

---

MDROs in Virginia: A Growing Challenge, A Shared Responsibility

Key points

- MDROs have increased in the U.S. and in Virginia since the COVID-19 pandemic.
- Preventing and containing MDROs remain important to reduce harm and save lives.

Multidrug-resistant organisms (MDROs) are spreading more rapidly in healthcare settings across the U.S. and Virginia, especially since the COVID-19 pandemic disrupted infection prevention efforts.[1] These organisms can cause severe, hard-to-treat infections, particularly in vulnerable patients/residents. Every missed opportunity to prevent or contain them puts lives at risk.

In Virginia, **carbapenemase-producing organism (CPO)** cases rose by over **50**% from 2023 to 2024 (430 to 651), and ***Candida auris*** (*C. auris*) cases surged from 1 case in 2019 to **368 in 2024**.[2,3]

The numbers tell a clear story — and demand urgent action. There is a critical need for vigilant surveillance, rapid response, and strong infection prevention practices. Together, we can reverse this trajectory and protect patients/residents from the growing threat of antimicrobial resistance.

Virginia Data Snapshots

Emerging Trends

New Delhi Metallo-β-Lactamase (NDM)-producing bacteria, a type of CPO, have dramatically increased in Virginia

- From 2019 to 2024, NDM in Virginia **increased by 633%.**[2]
- In 2019, NDM cases made up 8.6% of all CPO cases in Virginia. In 2024, they made up **22.1%** of all CPO cases in Virginia.[2]
- This is similar to national data that show from 2019 to 2023, NDM-carbapenem resistant Enterobacterales (CRE) infections surged by **more than 460%** in the United States.[4]

CPO cases among children, which until recently were rare, have **sharply** increased.

- The number of cases in the first half of 2025 (January 1st to June 30th) is already **3.7 times higher** than the total case count for 2022.[2,3]
- From 2022 to 2024, there was an average of **0.52 cases per month**. In the first half of 2025 (January 1st -July 1st), this has **increased more than 595%** to an average of **3.7 cases per month.**[2,3]

From Colonization to Infection: The Risk is Real

In Virginia, some people who became colonized with a targeted MDRO – meaning they carried the organism without symptoms – later developed serious infections with that same organism. Data from 2019 to June 30, 2025 showed:

- ***C. auris***: 6.3% of colonized individuals developed infections.[3]
  - Nearly half were bloodstream infections (12 of 25 cases).
- **CPOs**: 6.7% of colonized individuals developed infections.[2]
  - The **urinary tract** was the most common site (6 of 13 cases).

These findings highlight a critical public health message:

- Without early detection and containment, these MDROs can be transmitted and lead to life-threatening infections.
- Public health and healthcare partners across Virginia are working together to stop their spread.
- Read on to learn how you can support efforts to protect vulnerable patients/residents from MDRO threats.

High Priority Pathogens Require High-Impact Response

Public Health Measures to Combat MDROs

Key points

- Targeted MDROs, like *C. auris* and CPOs, continue to be high-priority public health threats.
- To address these threats, CDC guidance outlines public health interventions based on MDRO response tiers.
- The MDRO response tiers align with how widely an MDRO has spread in Virginia's health regions and districts.

Public health measures to combat MDROs follow CDC guidance, focusing on targeted MDROs (reportable MDROs) which are organisms resistant to most or all available antimicrobials. These pathogens can cause severe, life-threatening infections and spread rapidly in healthcare and community settings.

Examples of Targeted MDROs:

- CP-CRE: Carbapenemase-producing, carbapenem-resistant Enterobacterales
- CP-CRPA: Carbapenemase-producing, carbapenem-resistant *Pseudomonas aeruginosa*
- CP-CRAB: Carbapenemase-producing, carbapenem-resistant *Acinetobacter baumannii*
- *C. auris*: A multidrug-resistant fungus

If any of these targeted MDROs are detected, VDH rapidly implements public health interventions—such as screenings, monitoring, and infection control measures—based on MDRO response tiers. These tiers align with the spread across regions, helping scale containment efforts and prevent endemic transmission.

No matter the stage of MDRO spread, there are **prevention strategies** that can reduce MDRO transmission.

Certain healthcare facilities – such as long-term acute care hospitals (LTACHs) and ventilator-capable skilled nursing facilities (vSNFs) – face a significantly higher risk of MDROs. This makes the implementation of MDRO prevention strategies not just important, but essential.

If you are vSNF or LTACH, connect with your local health department (LHD) to learn how you can strengthen your infection prevention efforts and protect your patients/residents.

Learn more about response tiers in the CDC MDRO Containment Guidance. Reach out to your local health department (LHD) to find out what tiers apply to the targeted MDROs in your region.

Power of Partnerships: Coordinated Roles in Targeted MDRO Defense

Key Points

- **Unified Front:** Public health and healthcare partnerships are critical to preventing the spread and establishment of multidrug-resistant organisms (MDROs).
- **Complementary Roles:** Each has a unique and important role—when joined together, they form the most effective defense against MDROs.

Key Players in MDRO Prevention & Containment

Healthcare facilities — including hospitals and long-term care facilities — are on the front lines of MDRO prevention. Healthcare workers, providers, infection preventionists, and leaders play a critical role in their facilities and during patient/resident transfers.

Public health includes teams from the local and regional health departments, Healthcare-Associated Infection and Antimicrobial Resistance (HAI/AR) Program, and Division of Consolidated Laboratory Services (DCLS). These teams provide essential support and an active role across healthcare facilities and in the community.

Healthcare's Role	Public Health's Role
◆ **Have** infection prevention programs and resources (staffing, training, and supplies) ◆ **Proactively identify** patients at higher risk for infection or colonization with AR organisms ◆ **Follow** Standard Precautions during all patient care ◆ **Use** Enhanced Barrier Precautions (nursing homes only) or Contact Precautions when applicable. ◆ **Communicate** MDRO status of patients during all transfers so proper precautions are implemented. ◆ **Have** antimicrobial stewardship programs to reduce unnecessary antibiotic use ◆ **Report** CPOs and *C. auris* according to the reportable disease regulations ◆ **Collaborate** on MDRO prevention and control with their local health department ◆ **Enroll** and use Emergency Department Care Coordination MDRO alerts Learn more about healthcare MDRO prevention programs in the CDC healthcare MDRO guidelines.	◆ **Detect & track** targeted MDROs across the state, maintain and share data on cases and trends ◆ **Connect** partners across hospitals, nursing homes, dialysis centers, and beyond to support communication and response ◆ **Extend** capacity of healthcare facilities through guidance, education, and lab resources ◆ **Provide** resources to support MDRO prevention and responses that includes: ○ Onsite infection prevention and control (IPC) assessments ○ Tailored IPC trainings ○ Colonization screenings ○ Technical assistance ○ Access to laboratory testing ◆ **Address** MDRO communication challenges by facilitating a state workgroup through the Virginia Healthcare-Associated Infections Advisory Group.

What to Expect with a Targeted MDRO Response

VDH responds to reported targeted MDROs in the following situations:

- Detection of a single case
- Suspected or confirmed outbreaks
- Pediatric or vulnerable population cases emerge
- Environmental or setting-specific risks are identified (e.g., wastewater, long-term care)

With a targeted MDRO response, public health works with healthcare partners to prevent further spread of these MDROs through time-critical interventions. Interventions may vary based on the tier the organism falls under and can include:

- **Review** the patient's/resident's recent healthcare visits prior to and after the positive culture (e.g., 30 days prior to culture)
  - **Why:** To identify other facilities at risk and to establish epidemiologic surveillance.
- **Notify** healthcare providers
  - **Why:** So care teams know the patient/resident has an MDRO and can take the right steps to treat them and use the right Infection Prevention measures.
- **Conduct** infection prevention and control assessments
  - **Why:** To help a facility identify and address opportunities with IPC practices that can contribute to transmission.
- **Ensure** MDRO status is shared during facility transfers
  - **Why:** So the next facility knows a patient's/resident's MDRO status and can take proper precautions.
- **Recommend** additional surveillance
  - **Why:** To identify if the MDRO has spread and to guide next steps.
- **Screen** patients/residents who had contact with the index patient/resident
  - **Why:** To determine the extent of transmission and identify more cases to inform additional control measures.
- **Perform** additional screenings and IPC assessments if more cases are identified
  - **Why:** Identifying cases and implementing IPC measures are what prevent further MDRO transmission.

Learn more about public health MDRO responses.

Everyday Actions, Lifesaving Impact: Basic Infection Prevention Practices to Prevent MDROs

Everyday infection prevention practices are key to stopping MDROs. Every healthcare worker plays a vital role in protecting themselves and their patients/residents by consistently following these basic steps:

- Performing hand hygiene when indicated
- Using personal protective equipment correctly
- Cleaning and disinfecting the environment
- Cleaning, disinfecting, or sterilizing reusable medical equipment and devices after use
- Preventing water exposure risks

Water, sinks, and drains can be a source of MDROs. Read about what you can do to reduce risk in your healthcare facility.

Other important IPC practices are based on patient's/resident's risk for infection. These risk factors can include wounds, respiratory therapy, and invasive devices (e.g., urinary catheters, central lines).

Learn more about IPC for CPOs and *C. auris* from the VDH HAI/AR Program.

Findings from Regional IP MDRO Response Assessments: Top 5 IPC Challenges

When a targeted MDRO is identified, VDH Regional Infection Preventionists (IPs) are on the frontlines conducting onsite assessments at Virginia healthcare facilities. Through these assessments, they've uncovered recurring IPC gaps that can contribute to MDRO spread.

1. Routine audits not occurring for hand hygiene, personal protective equipment use, or environmental cleaning and disinfection.
2. Responsibilities not defined for cleaning and disinfection of reusable equipment and mobile medical devices.
3. Audit and feedback data not being reported to frontline staff and leadership.
4. Sink areas not clean and dry, patient/resident supplies in splash zones.
5. Inadequate number of alcohol-based hand rub dispensers and signage promoting hand hygiene in clinical areas.

VDH Regional IPs are actively partnering with facilities to close these MDRO IPC gaps and strengthen defenses against MDRO transmission.

How does your facility do with these top MDRO IPC challenges? If you need assistance improving any of these practices, reach out to your VDH Regional IP for a free consultation.

Visit the HAI/AR Website

The HAI/AR Resource hub makes it easy to find updates and learning materials to prevent infections and fight antimicrobial resistance.

vdh.virginia.gov/haiar

hai@vdh.virginia.gov

News and Education

- Subscribe to the HAI & AR Navigator Newsletter
- Check out our latest IPC resources and upcoming training events
- Join us for Cuppa Tea with an IP, a weekly chance to chat live with VDH IPs and subject matter experts about infection prevention

References:

1. CDC. Antimicrobial Resistance Threats in the United States, 2021-2022. https://www.cdc.gov/antimicrobial-resistance/data-research/threats/update-2022.html
2. VDH. Carbapenemase-Producing Organisms Quarterly Report. https://www.vdh.virginia.gov/haiar/carbapenemase-producing-organisms-quarterly-report/
3. VDH. *Candida auris* in the State of Virginia. https://www.vdh.virginia.gov/haiar/candida-auris-in-the-state-of-virginia/
4. Rankin et al. Changes in Carbapenemase-Producing Carbapenem-Resistant Enterobacterales, 2019 to 2023. Ann Intern Med. [Epub 23 September 2025]. doi:10.7326/ANNALS-25-02404