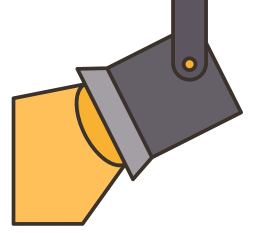




Spotlight on Carbapenemase-Producing Enterobacterales



Carbapenemase-producing organisms (CPOs) are an emerging and epidemiologically important public health threat. Surveillance data from VDH is showing a shift in the type of carbapenemases commonly seen in Enterobacterales.

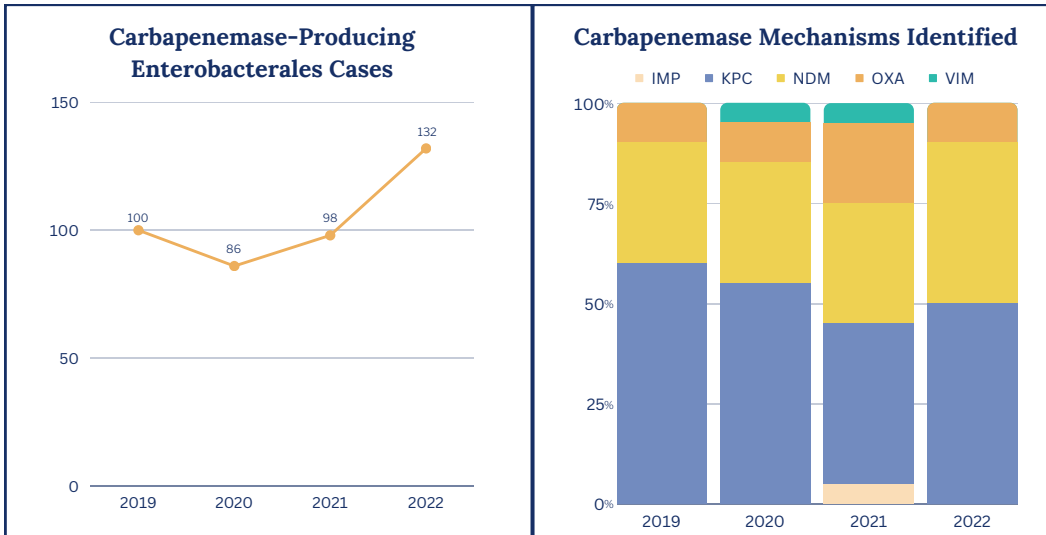
Key Points

1. Percentage of carbapenemase-producing Enterobacterales with presence of NDM is increasing
2. Antibiotics used for the treatment of KPC, such as Ceftazidime/Avibactam and Meropenem/Vaborbactam, are not effective against NDM
3. *E. coli*, when it produces a carbapenemase, is more likely to produce NDM

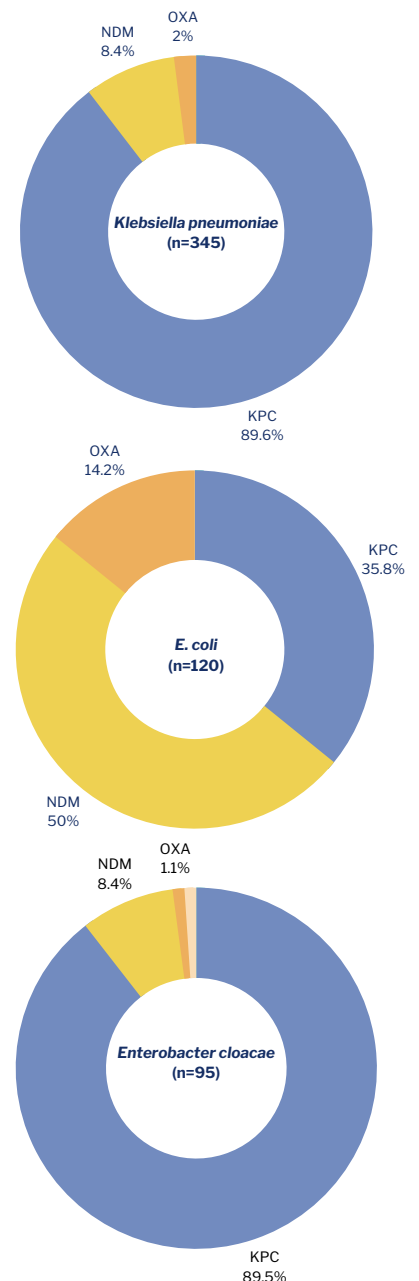
Five Common Carbapenemase Mechanisms

- *Klebsiella pneumoniae* carbapenemase (KPC)
- New Delhi metallo- β -lactamase (NDM)
- Oxacillinase-type carbapenemases (OXA)
- Imipenemase metallo- β -lactamase (IMP)
- Verona Integron-encoded metallo- β -lactamase (VIM)

Virginia Data



Carbapenemase Mechanisms Identified by Organisms, 2019-2022



Treatment Options for NDM:

Colistin has fallen out of favor as a treatment option with the development of newer antimicrobials

First Line Treatment Option: Ceftazidime/Avibactam plus Aztreonam, or Cefiderocol monotherapy

More information can be found in the [2023 IDSA Guidance on the Treatment of Antimicrobial Resistant-Gram Negative Infections](#)

Actions for Antimicrobial Stewardship Programs:

- Be aware of the increase in NDM-producing Enterobacterales
- Create facility-specific treatment recommendations for carbapenemase-producing organisms
- Review formulary to consider inclusion of antibiotics with activity against common carbapenemases
- Subscribe to the [HAI/AR Newsletter](#) to receive updates on MDROs in Virginia