



Summary Report on Carbapenemase Producing Enterobacterales (CPE)

March 2024

This is a summary report on CPE in Ireland for the period
March 1st 2024 to March 31st 2024

1. THE REPORT IS BASED LARGELY ON DATA RELATED TO THE HSE ACUTE HOSPITAL OPERATIONS BUT ALSO INCLUDES DATA RELATED TO ISOLATES FROM OTHER ACUTE HOSPITALS AND THE COMMUNITY.



Antimicrobial Resistance &
Infection Control Programme

Key points

- There were **105** new CPE patients identified in March 2024 as reported to the HSE acute hospital operations.
- 33,470 CPE surveillance samples were reported as tested in HSE laboratories in March 2024.
- The provisional total of new patients for March 2024 is 133 as reported to the National CPE Reference Laboratory Service (NCPERLS). The total for March 2023 was 70.
- **NOTE:** Total CPE reported to NCPERLS will include samples received from private hospitals, whereas CPE reported to the HSE acute hospital operations will only include HSE hospital cases.

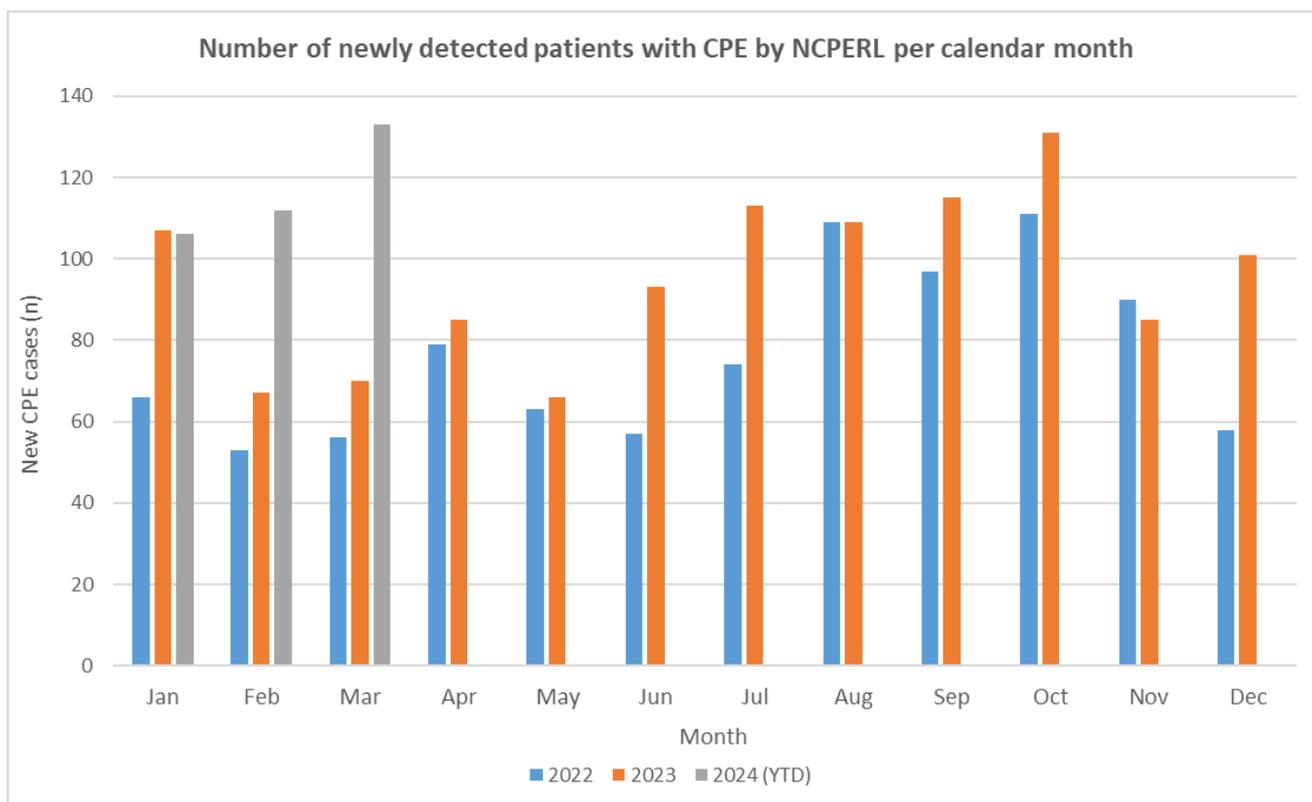
Additional details

February 2024

- Total of 181 CPE patient isolates were received in the NCPERLS and 2 environmental isolates were received.

Figure 1 – Number of newly detected patients with CPE by the National CPE Reference Laboratory Service per calendar month.

This figure is based on data from the National CPE Reference Laboratory Service. It is intended that it be updated monthly.



This figure illustrates the total number of patients newly detected with CPE each month in 2022 (blue), 2023 (orange) and 2024 year-to-date (YTD) (grey).

Table 1 - Hospitals with current outbreaks (as per March 2024 return for Business Information Unit (BIU), HSE)

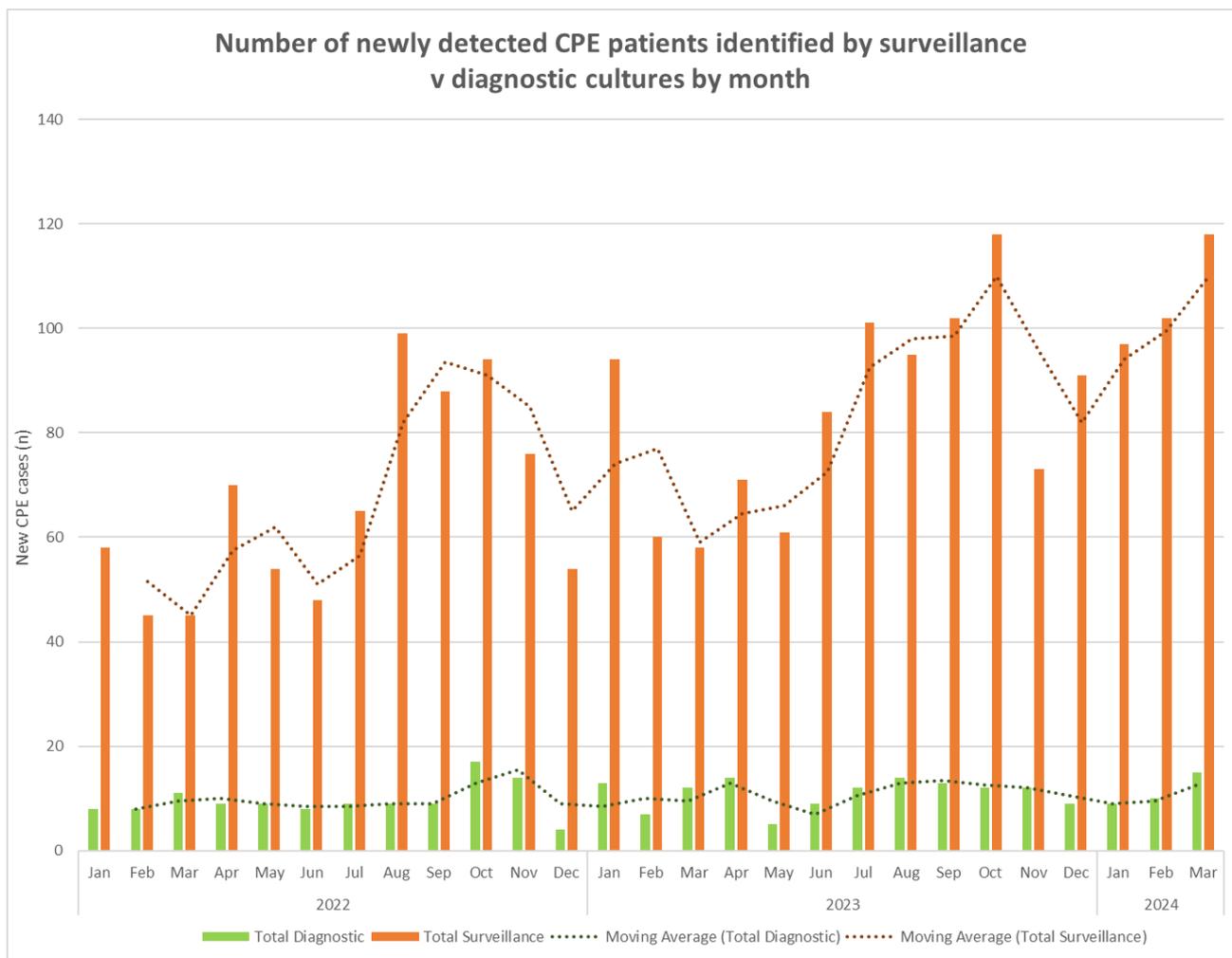
This figure is based on data collated by the HSE Business Information Unit (BIU). It is intended that it be updated monthly.

HOSPITAL GROUP	HOSPITALS REPORTING CPE OUTBREAKS
Children's Hospital Group	No outbreaks reported
Dublin Midlands Hospital Group	St. James's Hospital Tallaght University Hospital
Ireland East Hospital Group	MRH Mullingar St. Vincent's University Hospital Mater Misericordiae University Hospital St. Luke's General Hospital Kilkenny
RCSI Hospital Group	Beaumont Hospital Cavan General Hospital
Saolta Hospital Group	Galway University Hospital Letterkenny University Hospital Portiuncula University Hospital
South / South West Hospital Group	Cork University Hospital University Hospital Waterford
University Limerick Hospitals Group	University Hospital Limerick

(NOTE: **50 of 50 hospitals** have provided data returns to the question "Do you have an active/current CPE outbreak in your hospital during this month?").

Figure 2 – Total numbers of CPE patients identified by Surveillance and Diagnostic samples from January 2022 to February 2024.

This figure is based on data from the National CPE Reference Laboratory Service. It is intended that it be updated monthly.



Comment: This figure illustrates the number of newly detected patients with CPE from surveillance samples (orange) and diagnostic samples (green) each month since February 2022. The dark green dotted line illustrates the moving average for the number of patients with newly detected CPE from diagnostic samples. The dark orange dotted line illustrates the moving average for the number of patients with newly detected CPE from surveillance samples.

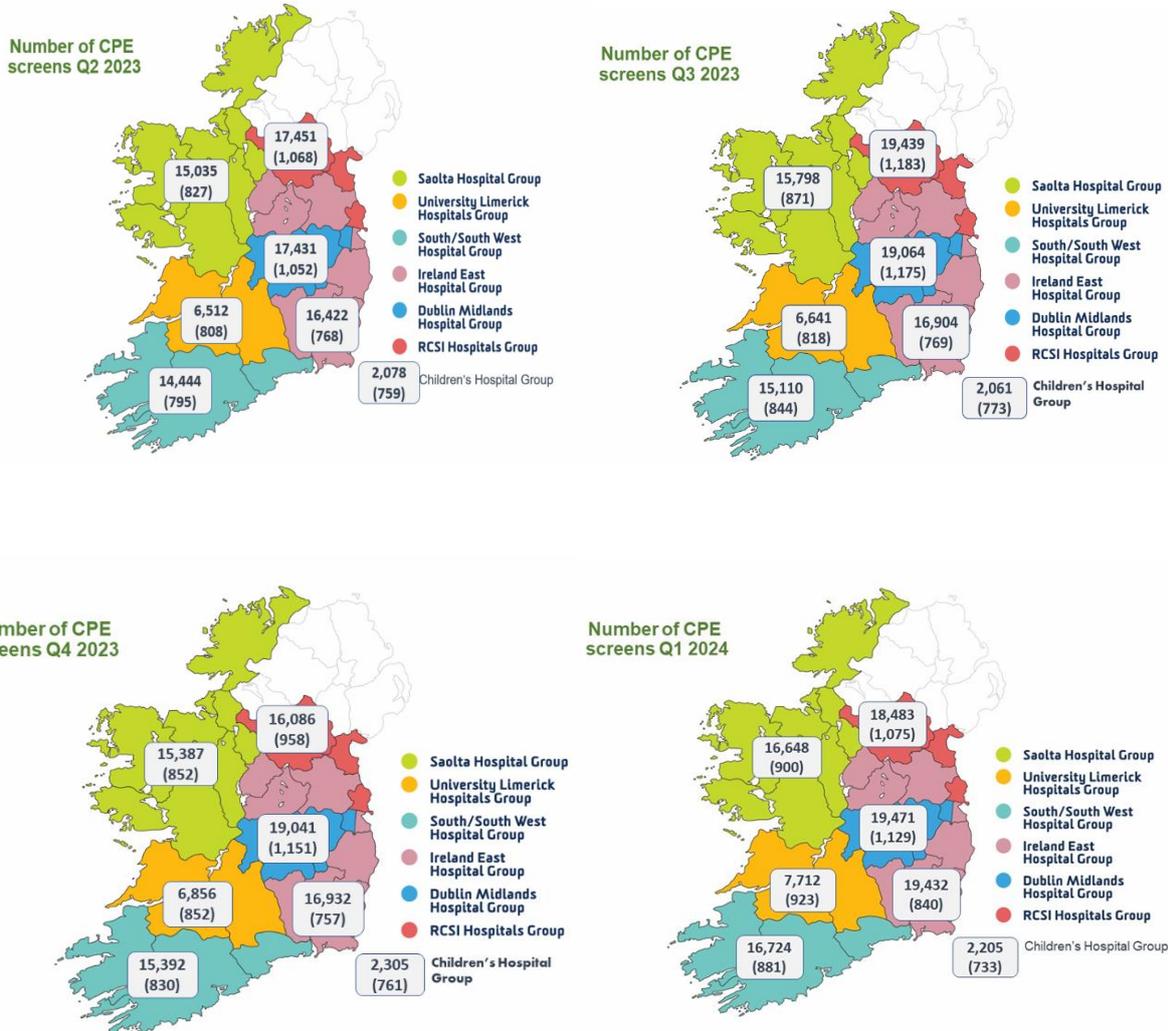
The proportion of first isolates from diagnostic samples appears to be stable at around 10 to 20% of total new CPE isolates with some month-to-month fluctuation, this is due to increased surveillance and consistent with improved control of CPE. In general isolates from diagnostic samples are likely to reflect clinical infection. Isolates from surveillance samples reflect detection of CPE gut colonisation in the absence of clinical CPE infection.

If most cases of CPE are detected from diagnostic samples this reflects a system in which relatively late detection of patients with CPE in the context of clinical infection is normal because the preceding asymptomatic colonisation is not detected.

Detection of most cases of CPE in surveillance samples, as is currently the case, reflects a system in which most people with CPE are detected relatively early in their contact with the healthcare system allowing early application of measures to control spread.

Figure 3 - Number of CPE surveillance samples per hospital group & (Rate per 10,000 Bed Days Used)

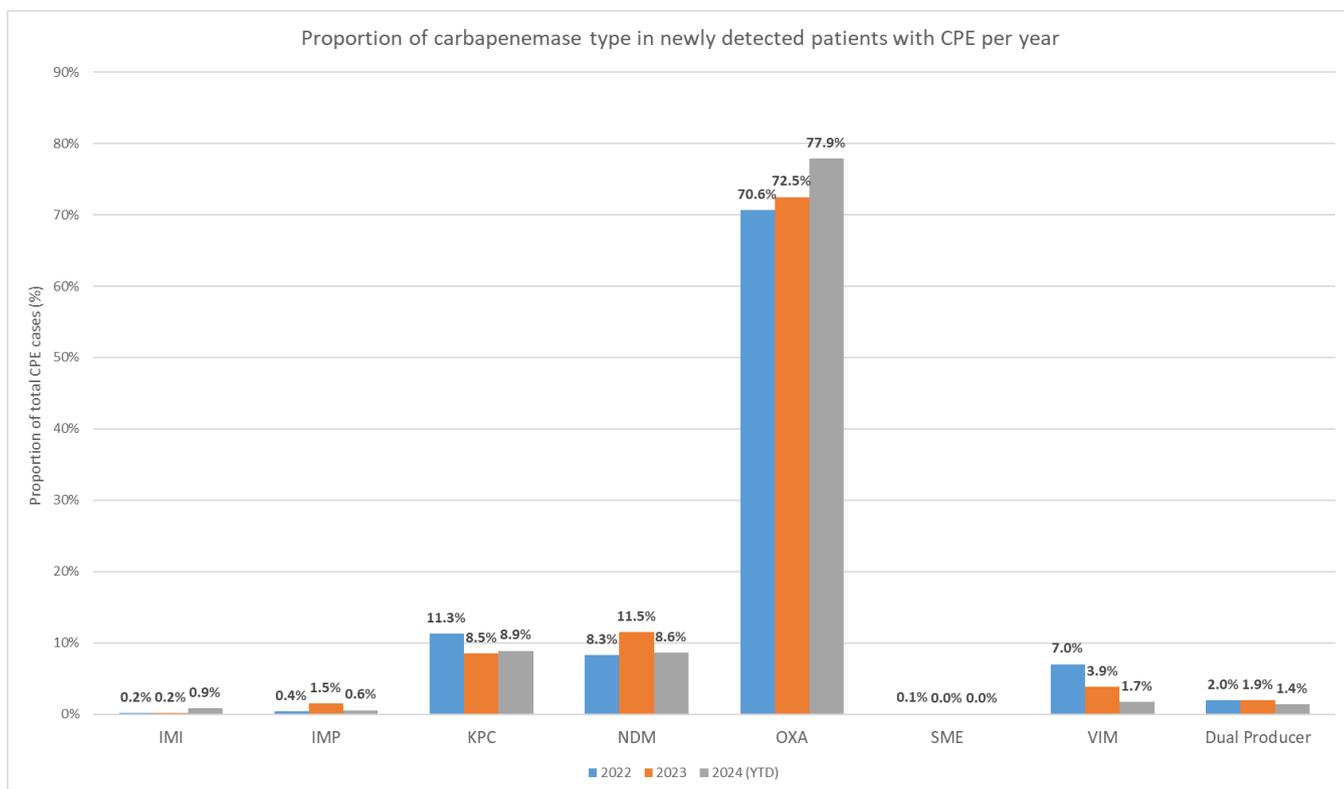
This figure is based on data collated by the HSE Business Information Unit (BIU). It is intended that it be updated quarterly¹.



¹ Data up-to-date at time of report publication.

Figure 4: Proportion of newly detected CPE by carbapenemase type per year

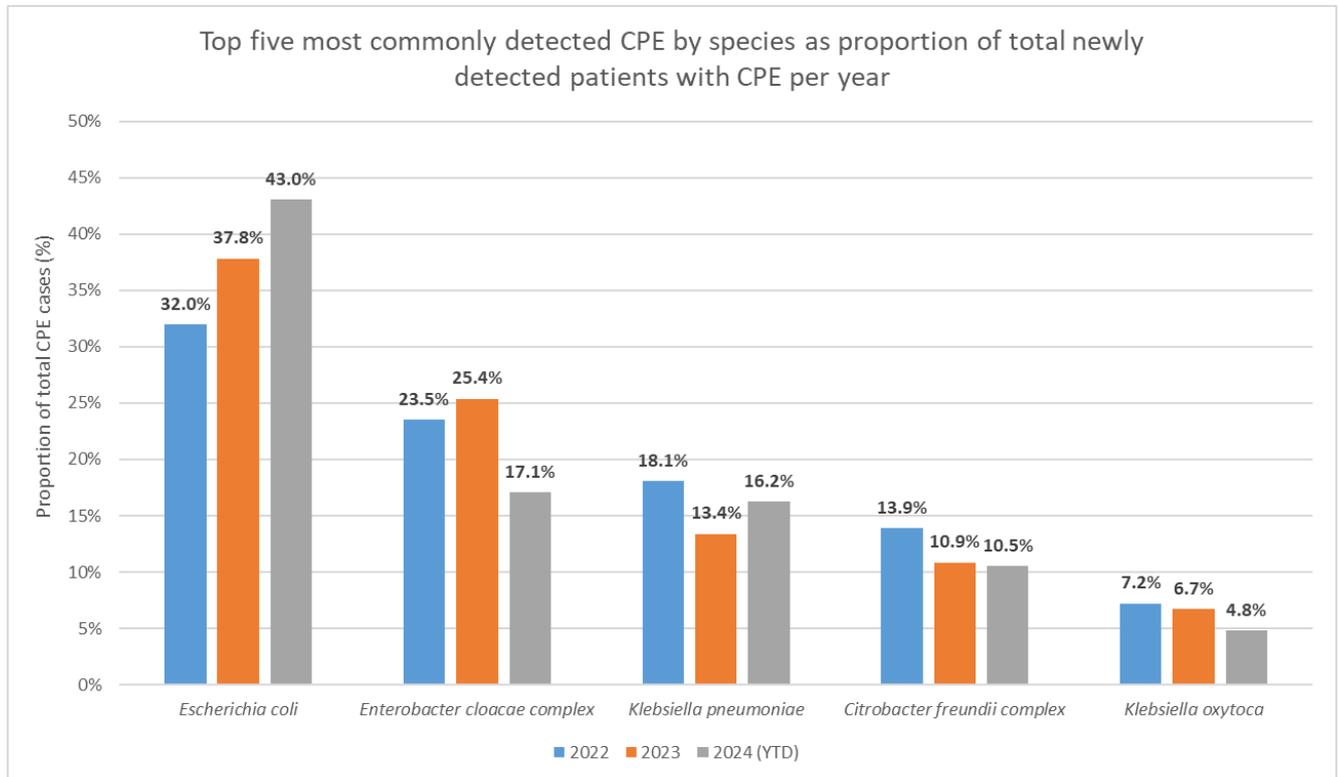
This figure is based on data from the National CPE Reference Laboratory Service. It is intended that it be updated monthly.



Comment: This figure illustrates the proportion of newly detected patients with CPE by carbapenemase type. The blue bar illustrates 2022, the orange bar illustrates 2023 and the grey bar illustrates the year-to-date (YTD) data for 2024. Resistance genes are labelled on the x-axis and the dual producer represents isolates carrying two carbapenem resistance genes. OXA resistance genes continue to be the mostly commonly detected, with increased detection of IMP, NDM noted between 2022 and 2023. Decreased detection of KPC and VIM was also noted between 2022 and 2023. The detection of isolates carrying two resistance genes (Dual producers) has remained stable between 2022 and 2023.

Figure 5: Top five most commonly detected CPE by species as proportion of total newly detected patients with CPE per year

This figure is based on data from the National CPE Reference Laboratory Service. It is intended that it be updated monthly.



Comment: This figure illustrates the proportion of the top 5 most identified CPE by species of all newly detected CPE. The blue bar illustrates 2022, the orange bar illustrates 2023 and the grey bar illustrates the year-to-date (YTD) data for 2024. Species are labelled on the x-axis. All other species are identified <2% and have been omitted from this graph for clarity. *Escherichia coli* continues to be the mostly commonly detected CPE species with an increasing trend noted. An increased detection of *Enterobacter cloacae* complex isolates was noted between 2022 and 2023. Decreased detection of *Klebsiella pneumoniae* was also noted between 2022 and 2023. The detection of *Citrobacter freundii* complex and *Klebsiella oxytoca* has remained relatively stable between 2022 and 2023.

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