



Summary Report on Carbapenemase Producing Enterobacterales (CPE)

September 2024

This is a summary report on CPE in Ireland for the period
September 1st 2024 to September 30th 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 **150** new CPE patients identified in September 2024 as reported to the HSE acute hospital operations. The number of new cases of CPE detected have increased over the past three quarters (Q1 2024 to Q3 2024).
- 31,305 CPE surveillance samples were reported as tested in HSE laboratories in September 2024. The number of surveillance samples reported has increased over the first two quarters (Q1 and Q2 2024) and slightly decreased in Q3 2024.
- The provisional total of new patients for September 2024 is 192 as reported to the National CPE Reference Laboratory Service (NCPERLS). This is the highest monthly number of new patients reported by NCPERLS to date. The total for September 2023 was 114.
- **NOTES:**
 - Total CPE reported to NCPERLS may include samples received from private hospitals, whereas CPE reported to the HSE acute hospital operations only includes HSE hospital cases. Due to the length of time involved in preparing samples for transport to NCPERLS there may be slight differences in the monthly counts between the BIU and NCPERLS HSE hospital cases.
 - The NCPERLS data has 7 isolates with a collection year of 2022 and 2023 that were received in September 2024. These have been added to the number of CPE cases reported for the month of September.
 - Data were missing for two hospitals in September 2024 BIU returns. This may result in underreporting of CPE cases and surveillance samples.

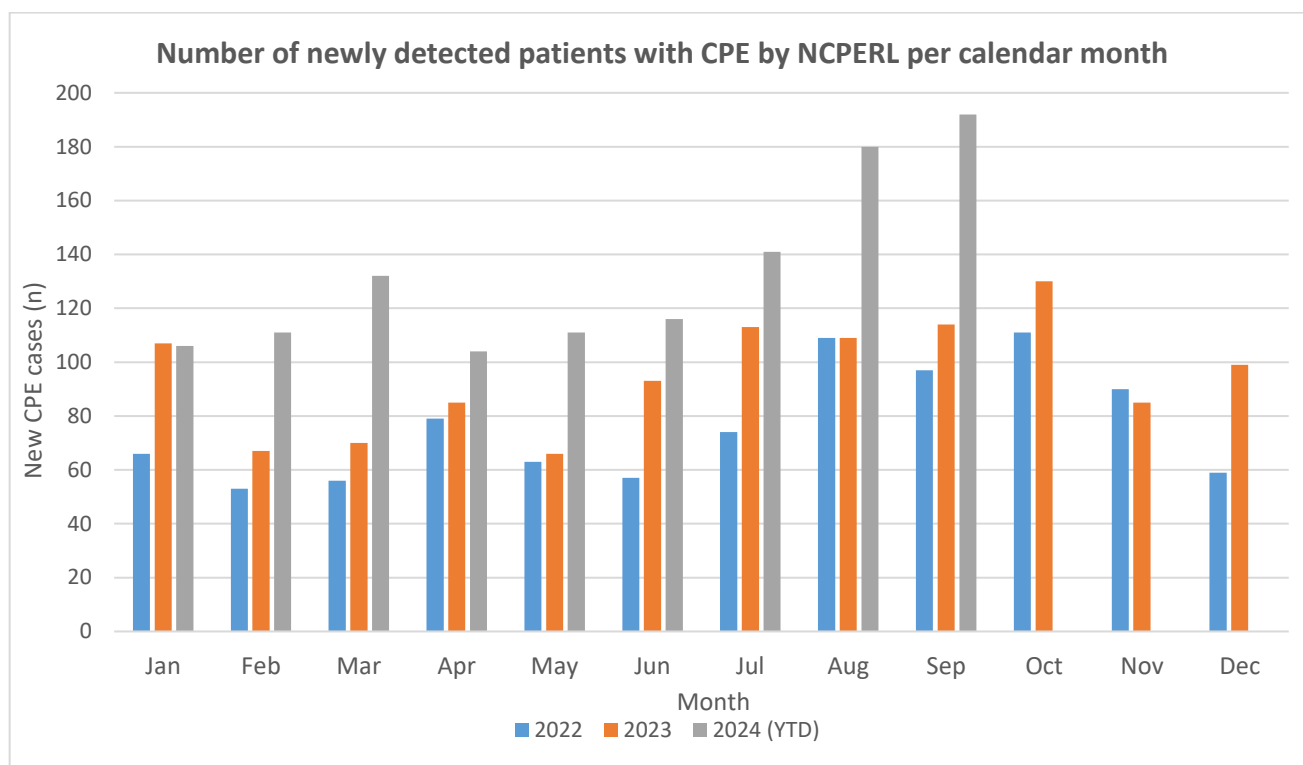
Additional details

September 2024

- Total of 276 CPE patient isolates were received in the NCPERLS and 5 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 September 2024 return for Business Information Unit (BIU), HSE)

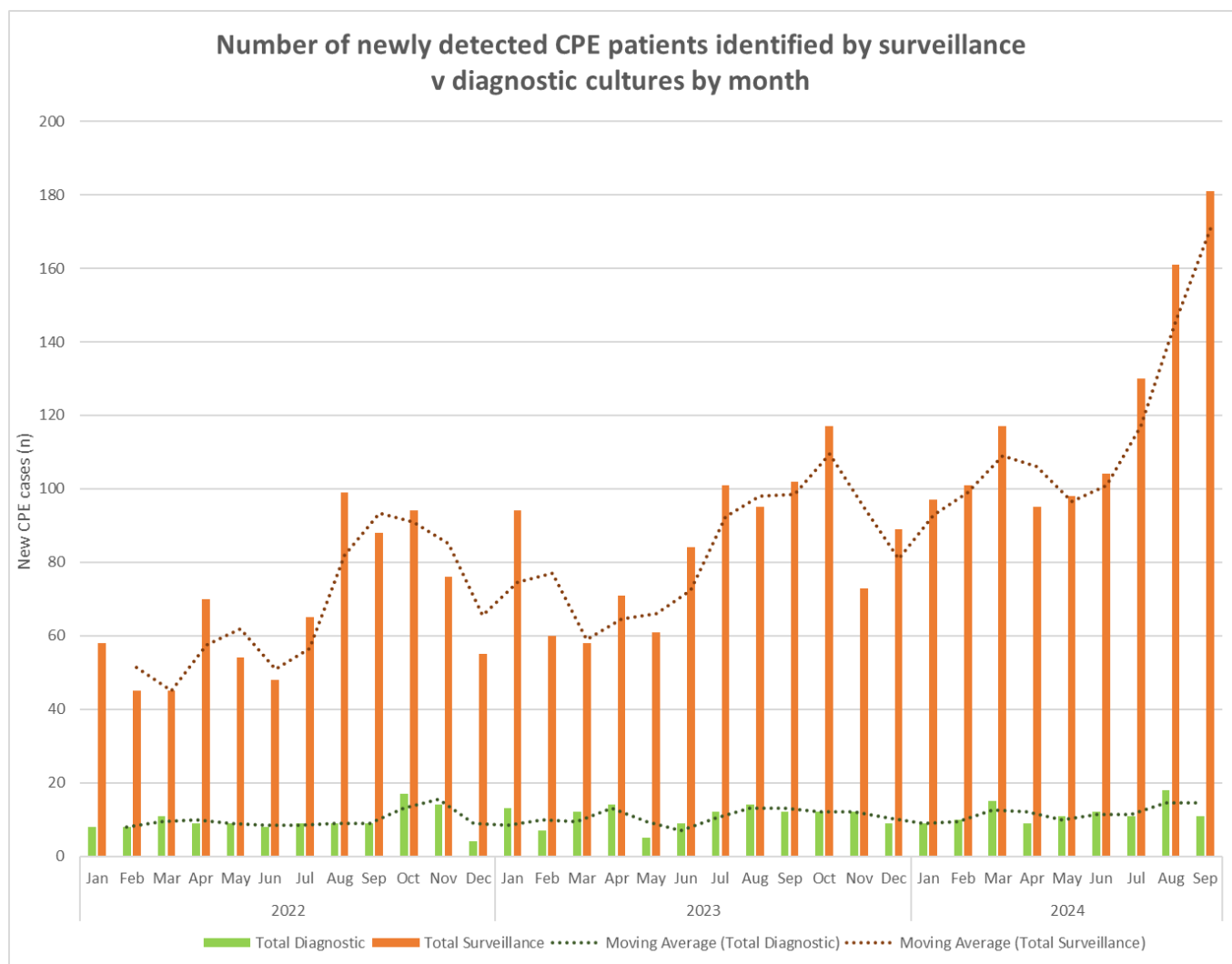
This figure is based on data collated by the HSE Business Information Unit (BIU). It is intended that it be updated monthly.

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

(NOTE: **47 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 newly identified by Surveillance and Diagnostic samples from January 2022 to September 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 January 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.

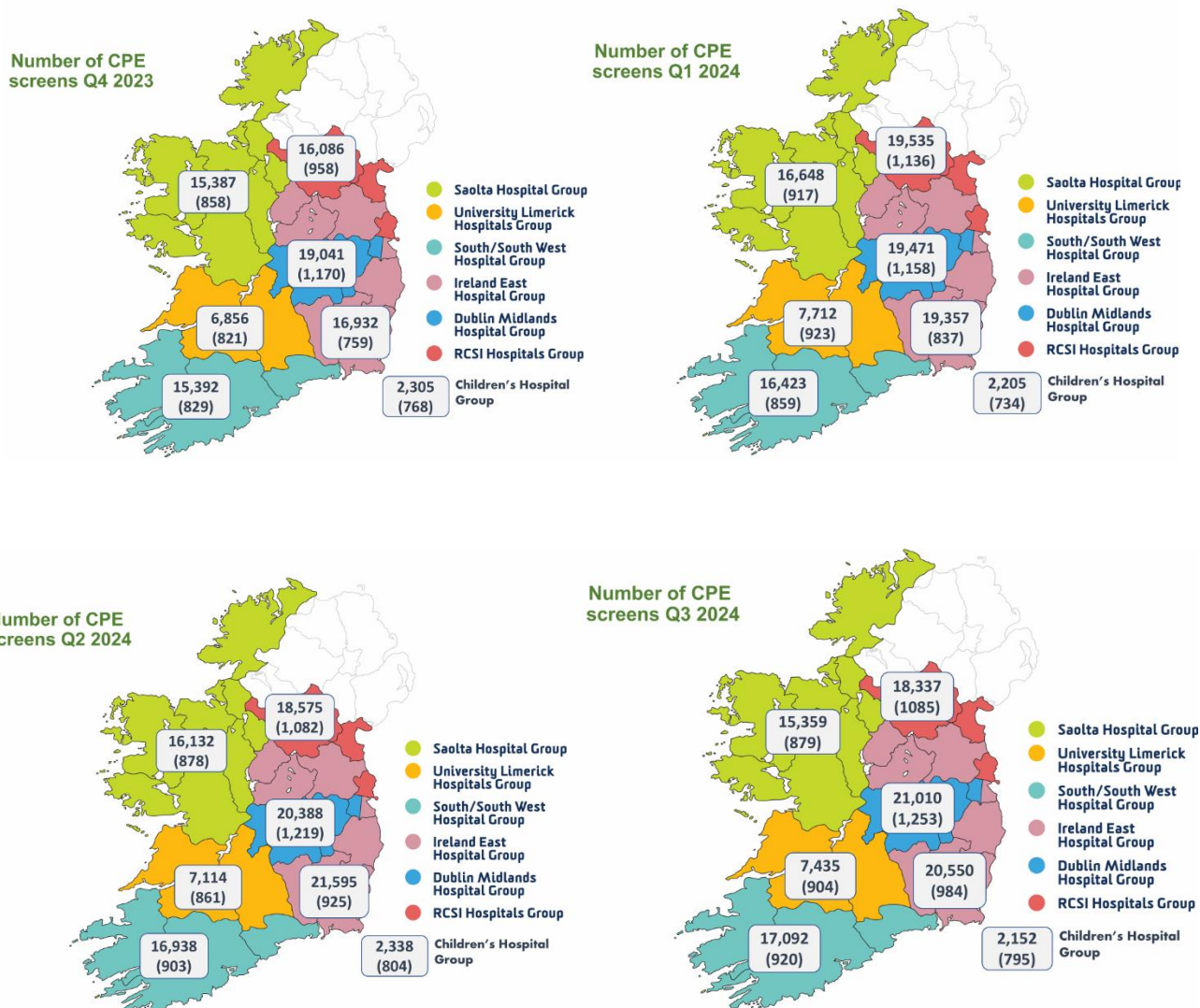
The proportion of first isolates from diagnostic samples appears to be stable at around 10 to 20% of total new CPE isolates with some month-to-month fluctuation, this is due to increased surveillance and consistent with improved control of CPE. In general isolates from diagnostic samples are likely to 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)

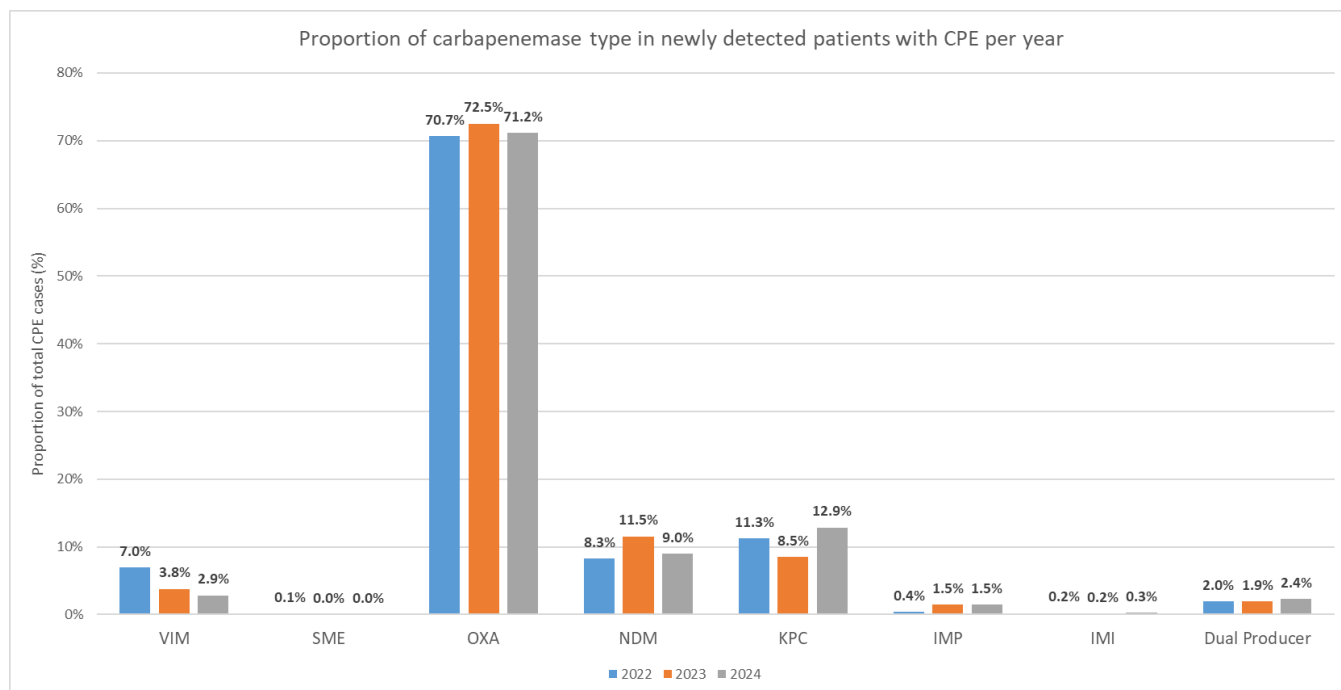
This figure is based on data collated by the HSE Business Information Unit (BIU). It is intended that it be updated quarterly¹.



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

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

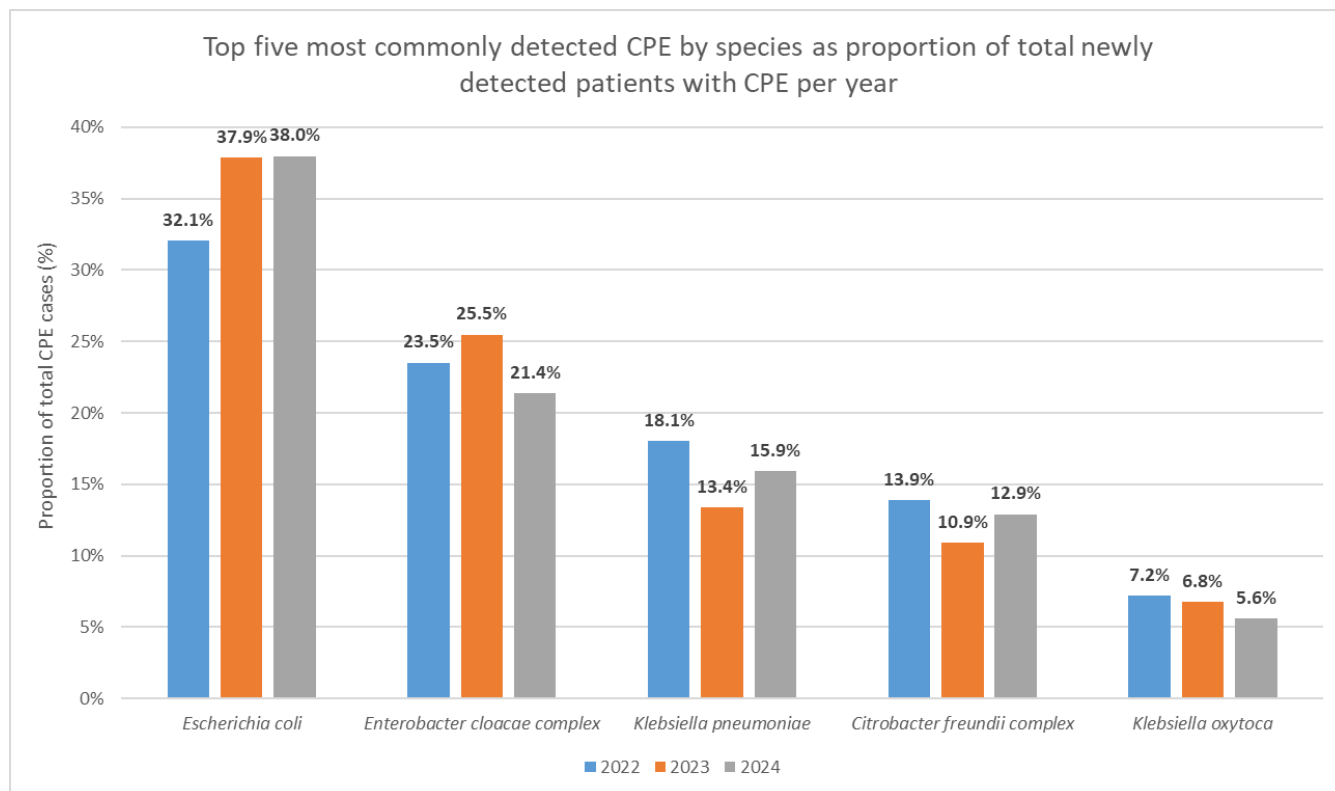
This figure is based on data from the National CPE Reference Laboratory Service. It is intended that it be updated monthly.



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 comprise fewer than 2% of new cases and have been omitted from this graph for clarity. *Escherichia coli* continues to be the most commonly detected CPE species with an increasing trend noted.

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