

Communicable Diseases Weekly Report

Week 30, 19 July to 25 July 2020

In summary, we report:

- [Carbapenemase-producing *Enterobacteriales* \(CPE\)](#) – summary of epi weeks 1-30
- [Novel coronavirus 2019 \(COVID-19\)](#)

*Please note there is no table of NSW notifiable conditions data included in this week's report due to a current problem with notifiable disease data.

For further information see NSW Health [infectious diseases page](#). This includes links to other NSW Health [infectious disease surveillance reports](#) and a [diseases data page](#) for a range of notifiable infectious diseases.

Carbapenemase-producing *Enterobacteriales* (CPE): epi weeks 1–30

Infection and colonisation with Carbapenemase-producing *Enterobacteriales* (CPE) was made notifiable in NSW in February 2019. CPE is not a specific disease, but refers to antibiotic resistance in a broad family of bacteria (*Enterobacteriales*). As a result, individual patients may generate multiple notifications representing different organism or gene combinations.

Between 29 December 2019 and 25 July 2020 (epi weeks 1–30), there were 149 unique notifications of CPE from 136 case patients. Ages ranged from 2 weeks to 97 years, with the median age of case patients at the time of notification being 65 years. More patients were male (61%, n=83) than female (39%, n=53). Notifications were received from patients in 12 of 15 NSW Local Health Districts (LHD), as well as private hospitals and speciality networks. Notifications relate to the location of the patient at the time of specimen collection, not the location of resistance gene acquisition.

Thirteen different *Enterobacteriales* species were detected, most commonly *Enterobacter cloacae* complex (42%), *Escherichia coli* (26%), and *Klebsiella pneumoniae* (14%). Five different carbapenemase-producing resistance genes were detected: IMP (70%), NDM (21%), OXA-48 (7%), OXA-23 (1.3%) and SME (0.7%). Of the 149 notifications received, the majority of specimens were collected for screening purposes (38%, n=56).

Enterobacteriales are the largest family of gram-negative bacteria that affect humans and occur naturally in the gastro-intestinal tract. Some individuals who have acquired CPE can carry it harmlessly in their gut like other *Enterobacteriales* (a colonisation) and will not have any symptoms. Occasionally, these bacteria can spread outside the gastro-intestinal tract and cause serious infections such as bacteraemia, pneumonia, urinary tract infections and wound infections. Clinical presentation and symptoms vary and will depend on the location and severity of infection.

Carbapenems are an important class of antibiotics (broad spectrum β -lactams) which are highly effective against most Gram-negative infections. *Enterobacteriales* can acquire resistance to carbapenem antibiotics by a number of mechanisms. *Enterobacteriales* which are resistant to carbapenem antibiotics are called carbapenem-resistant *Enterobacteriales* (CRE). Carbapenemase-producing *Enterobacteriales* (CPE) describe *Enterobacteriales* which are resistant to carbapenem antibiotics through production of carbapenemase enzymes encoded by plasmid-mediated carbapenemase genes. The carbapenemase enzymes hydrolyse carbapenems (as well as other β -lactams, such as penicillins and cephalosporins). This means that CPE infections are difficult to treat.

Further information

- NSW Health [CPE Surveillance Reports](#).

- NSW Health [CPE Control Guidelines](#).
- [NSW Health Guideline for Surveillance & Response for CPE in NSW Health Facilities](#).

Novel coronavirus 2019 (COVID-19)

For up-to-date information regarding the COVID-19 outbreak and the NSW response, please visit the [NSW Health COVID-19 page](#).

Summary of notifiable conditions activity in NSW

Please note that there is no table of NSW notifiable conditions data included in this week's CDWR, due to the fact that we are currently experiencing a problem with notifiable disease data reporting which is affecting all diseases and all time periods.