

## 5. *Clostridium perfringens* (Type A) food-borne Intoxication

(Notifiable)

**Description:** *Clostridium perfringens* (formerly *C. welchii*) *Clostridium perfringens* is a spore-forming foodborne pathogen that produces a mild gastroenteritis caused by an enterotoxin. It results mainly in sporadic disease but can occasionally produce outbreaks.

**Annual Numbers:** About one case per year.

**Seasonal Distribution:** There is no seasonal pattern of incidence.

**Causative Agent:** *Clostridium perfringens* produces a mild self limiting gastroenteric illness mediated by an enterotoxin. Asymptomatic carriage is not uncommon. Type A is the form most commonly seen in the UK and Ireland. This strain also produces gas gangrene. Severe extensive outbreaks of the Type C strain (pigbel - a severe necrotising enteritis with a high case fatality rate) followed the Second World War in Germany, and are still seen in Indonesia and Papua New Guinea.

**Reservoir:** Worldwide in man and other vertebrates. Found also in soil, aquatic and marine sediment. Asymptomatic carriage is extremely common.

**Transmission:** Almost exclusively foodborne transmission due to inadequate heating or reheating of meat based foods, such as stews and pies, especially if the food has been contaminated by soil or faeces. Spores survive cooking to germinate and grow during cooling. If the food is not reheated properly, the organism multiplies in the lower GI tract releasing enterotoxin. The dose of enterotoxin required to produce human illness is large.

**Outbreak Potential:** *Clostridium perfringens* has moderate outbreak potential if transmitted through food.

**Incubation period:** Generally 10-12 hours (range 6-26).

**Period of communicability:** Not applicable

**Epidemiology:** Incorrect food preparation, poor hygiene during canning or inadequate reheating. Congregate setting such as restaurants or schools poses the greatest risk. Large scale meal preparation increases the potential that food may not be adequately reheated. Heavy bacterial contamination (>10<sup>5</sup> bacteria/gram of food) is generally required to produce adult disease.

**Exposure-prone groups:** Residents in institutions, those consuming contaminated food and food handlers.

**Clinical Features:** Sudden onset colic followed by watery, copious diarrhoea and nausea. Vomiting and

fever are generally absent. The duration is short, usually less than 24 hours.

**Clinical Management of Cases:** Enteric precautions. Admit to hospital if necessary. The case should be notified to the local Department of Public Health. It is important to determine if the case is aware of similar cases suggesting the possibility of an outbreak. Determine if case is in a risk category. Simple rehydration is generally all that is necessary.

**Public Health Management of Cases:** Determine if there are linked cases. Obtain food history for three days prior to symptoms.

**Food Hygiene Implications:** Food hygiene re-education is necessary for food handlers.

**Public Health Management of Contacts:** Not applicable.

**Exclusion:** Until 48 hours after first normal stool.

**Microbiological Clearance:** Not required.

**Notifiable:** to the local [Medical Officer of Health](#).