Case study C - Conclusions

HANDOUT
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ANSWERS

Investigation findings

A retained sample of the chicken and gravy contained high levels of *Clostridium perfringens*, which was also isolated from the majority of ill children.

The source and vehicle was the chicken.

Explanation

The cause of the outbreak was the long, slow cooling of the chicken after boiling. The spores of *Clostridium perfringens* would have been activated by the cooking and germinated to produce vegetative bacteria. The long, slow cooling would have resulted in rapid multiplication, especially around 45°C when it would take only 10 minutes to double the numbers present.

After consumption, sporulation within the stomach and intestine would have released enterotoxin in sufficient amount to cause food poisoning.

Controls

The chickens should have been removed from the boiler, separated and cooled as quickly as possible after the temperature had reached 63°C. The critical temperature range for *Clostridium perfringens* is between 30°C and 50°C.

After cooling for around 1.5 hours, the chickens should have been placed in a suitable refrigerator, i.e. one with adequate capacity and not used for raw food.