
TO:	Chair and members of the Board of Health	
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Recommendations

It is recommended that the Board of Health:

1. **Receive this report for information.**

Key Points

- Campylobacter bacteria commonly cause foodborne illness, which is often associated with improperly processed contaminated meat.
- A foodborne outbreak of campylobacteriosis occurred in the City of Guelph in May/June 2017. Eighty-two individuals attended a catered event, where roasted pig and a variety of cold salads were served.
- No left-over food from the event was available for testing for the presence of enteric pathogens at the time of the outbreak investigation.
- The inspection and epidemiological investigation indicate pork as the source of illness.

Discussion

Campylobacter bacteria are the most common causes of food-borne gastrointestinal illness in North America and Europe.¹ The number of *Campylobacter* bacteria needed to cause infection in humans is very low, and this allows the organism to be the cause of many sporadic and outbreak-related infections in North America each year.

Campylobacter infections in people most often occur when food contaminated by the organism is consumed. Contamination of foods can occur either at slaughter or by cross-contamination from other foods at some stage during food preparation. If a contaminated food (meat or other) is served uncooked or undercooked and the bacteria are not killed, people consuming the food can become infected. *Campylobacter* infections can cause diarrhea, cramping, abdominal pain, and fever. Symptoms typically occur two to five days after exposure to the bacteria and typically lasts about one week.¹

Outbreak Investigation

A foodborne *Campylobacter* outbreak occurred in the City of Guelph in May/June 2017. Wellington-Dufferin-Guelph Public Health (WDGPH) staff received notification of a positive case of *Campylobacter jejuni* from the Public Health Ontario Laboratory (PHOL) on Friday, June 9th. A second positive case of *C. jejuni* was reported to WDGPH from Waterloo Region Public Health (WRPH) on June 12th. The case disclosed that they had attended a catered pig roast in Guelph on May 30th.

Upon confirmation of two positive cases, both having attended the same event, a formal investigation was initiated by WDGPH in collaboration with the Ministry of Health and Long Term Care (MOHLTC), Public Health Ontario (PHO), PHOL and WRPH.

A complete list of all attendees was obtained from the venue supervisor. Of the 82 people who attended the event, 74 individuals (90%) were interviewed by WDGPH. Of those interviewed, 33% reported that they had experienced illness since attending the pig roast and were classified as confirmed or probable cases.

On June 13th, WDGPH staff conducted an unannounced inspection of the catering facility in Guelph. Inspection findings revealed a number of items not in compliance with the Ontario Food Premise Regulation 562, including: hazardous food not being maintained at 4°C or lower during transportation; poor sanitary maintenance of and lack of supplies in staff washroom facilities; and insufficient general housekeeping to maintain the premise in a clean and sanitary condition.

WDGPH staff were informed by the caterer that pig roasts are prepared nearly every weekend during the summer months for a variety of events throughout the region. WDGPH staff are also aware of a number of additional caterers in the area that prepare and serve pig roasts. Pig roasts are a popular and high-risk method of cooking for large gatherings. It is important that WDGPH staff are prepared to respond to community outbreaks and remain diligent in their knowledge of food safety and utilize both internal and external resources available to them.

Outcomes

WDGPH staff from the Environment Health and Control of Infectious Disease teams investigated this outbreak quickly. Three positive outcomes from this investigation included: improvement in staff response to outbreak events, development of educational resources and strengthening of partnerships with external agencies.

Effective Staff Response

A strong and well-prepared workforce, along with coordination within the agency, represent key factors in an effective response to a community outbreak situation. Each outbreak provides an opportunity for staff to familiarize themselves with internal policies and procedures, as well as

strengthen their knowledge on the resources available to them within the organization. The preparedness demonstrated in this outbreak situation will strengthen response capacity in the future.

Educational Resources

Each outbreak represents a unique opportunity to evaluate the usefulness of available resources on safe handling and preparation of hazardous food and whether informational gaps exist. As a result of this outbreak, changes are being considered to current practices and tools to better equip staff to deal with future outbreak events effectively and efficiently.

Strengthening Partnerships

WDGPH has strong working relationships with a wide variety of stakeholders, including both federal and provincial governmental organizations, as well as neighbouring health units. Access to and use of external resources improves WDGPH's response capabilities to outbreak situations that threaten the health of the public. Coordination and collaboration between partners ensures a rapid and effective response to investigate the cause of illness.

Finance and Administration

Outbreak investigations generally impact programmatic business continuity to defer regularly scheduled work and result in additional hours work during the response. Staff track hours for normal scheduled working hours and hours beyond their normal scheduled hours.

	Normal Hours	Beyond Normal Hours	Total Hours
Nurses and PHI's	231.5	5.5	237
Administrative Support	39	17.5	56.5
Professional Support	66	17.5	83.5
		TOTAL	377

Costs to the agency are considerable during an outbreak investigation, with respect to both financial and human resources. The positive outcomes noted in this outbreak investigation, as well as improvements to educational resources available to food operators, allow for a rapid and well-coordinated response for future foodborne illness outbreaks. This deployment of resources help mitigate associated agency costs and alleviate the impact on the community.

Conclusion

Pig roasts are a common catering method for preparing and cooking large volumes of meat. This cooking style is associated with a number of food safety challenges that food operators must be aware of in order to prevent any potential food borne illness from occurring in those consuming the meat.

For this investigation, the results of the inspection and the epidemiological analysis of food exposure supports the hypothesis that meat from the pig roast was the food item most likely to have been the source of illness for people who attended the event on May 30th.

Foodborne illness remains a significant burden on the overall health and well-being of the WDGPH community, as well as the health unit's financial and administrative resources. This report highlights the importance of continued training of health unit staff in outbreak response, as well as the continued education of operators of food premises on the safe handling and preparation of hazardous foods, particularly those items with complex cooking methods.

Ontario Public Health Standard

Food Safety Standard

Requirement # 1. The board of health shall conduct surveillance of:

- Suspected and confirmed food-borne illnesses; and
- Food premises in accordance with the Food Safety Protocol, 2008 (or as current) and the Population Health Assessment and Surveillance Protocol, 2008 (or as current).

Requirement # 2. The board of health shall conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations, in accordance with the Population Health Assessment and Surveillance Protocol, 2008 (or as current).

Requirement # 7. The board of health shall inspect food premises and provide all the components of the Food Safety Program within food premises as defined by the Health Protection and Promotion Act and in accordance with the Food Premises Regulation (O. Reg. 562); the Food Safety Protocol, 2008 (or as current); and all other applicable Acts.

WDGPH Strategic Direction(s)

Health Equity

We will provide programs and services that integrate health equity principles to reduce or eliminate health differences between population groups.

Organizational Capacity

We will improve our capacity to effectively deliver public health programs and services.

Service Centred Approach

We are committed to providing excellent service to anyone interacting with Public Health.

Building Healthy Communities

We will work with communities to support the health and well-being of everyone.

Health Equity

Left-over food items from the pig roast were delivered, the following morning, to a drop-in centre located in Guelph. Individuals accessing the services provided by this facility represent a vulnerable subset of our population, increasing their risk of illness. Following confirmation of the outbreak, the centre was contacted and the facility was inspected. Trace-back of the donated

food took place and follow-up of people who consumed the food was conducted, where possible. No illness was reported in association with consumption of pork at the centre.

Appendices

None.

References

1. Centers for Disease Control: Campylobacter factsheet:
<https://www.cdc.gov/foodsafety/diseases/campylobacter/index.html> (accessed Jul 14, 2017)