

STAPHYLOCOCCUS AUREUS INTOXICATIONS

Disease Overview

Staphylococci produce a variety of syndromes, including food borne intoxication. Toxins are produced by bacterial growth in the food before consumption, with several enterotoxins of *Staphylococcus aureus* being resistant to heat. This is one of the principal causes of acute food intoxications worldwide.

Symptoms

Symptoms are acute onset with severe nausea, cramps, vomiting and extreme exhaustion. Illness is often accompanied by diarrhea and sometimes with subnormal body temperature and lowered blood pressure. Illness usually lasts a day or two but can be longer.

Reservoir

Humans are the main reservoir (located in purulent discharges from infections, nasopharyngeal secretions or on apparently normal skin). Approximately 25% of healthy people are carriers of *Staphylococcus aureus*. Occasionally the source is cattle, dogs, or fowl.

Mode of Transmission

Illness is linked to the consumption of food products containing Staphylococcal enterotoxin, particularly foods that contact food handler's hands- either without subsequent cooking or with inadequate heating and refrigeration.

Foods at risk of contamination include pastries, custards, salad dressings, sandwiches, sliced meat and meat products. Other foods at risk include inadequately cooked ham and salami and unprocessed cheese. When these foods remain at room temperature for several hours before being eaten, toxin producing staphylococci multiply and produce the heat stable toxin.

Incubation Period

Interval between eating food and onset of symptoms ranges from 30 minutes to 8 hours, usually 2-4 hours.

Period of Communicability

Not communicable

Risk Factors

Increased risk for persons acquiring and/or severe illness:

- Improperly handled food products contaminated with the Staphylococcal enterotoxin (such as: ready to eat foods, cream based foods (pastries, custards), sliced meats, sandwiches, and foods held or cooked at improper temperatures. Cured meats and inadequately processed cheese have also been linked to illness).
- Unsanitary conditions and crowded community settings increase exposure
- Especially vulnerable to infection are infants, elderly and the chronically ill
- Travel to less developed areas

Surveillance Case Definition

Confirmed case is clinical illness AND:

- recovery of large numbers of staphylococci ($\geq 10^5$ per gram) from an epidemiologically implicated food item
- OR
- detection of enterotoxin in an epidemiologically implicated food item (no national definition)
- OR
- recovery of a large number of enterotoxin producing staphylococci from stool or vomitus from a single person
- OR
- isolation of organisms of the same phage type from stool or vomitus samples of 2 or more ill people

Diagnosis and Laboratory Guidelines

Diagnosis of staphylococcal food poisoning in an individual is generally based only on the signs and symptoms of the patient. Testing for the toxin-producing bacteria or the toxin is usually reserved for outbreaks.

Reporting

Per Policy 2.2 Disease and Event notification to OCMOH and Disease and Event Reporting section

- Routine Surveillance (RDSS) for all confirmed cases

Case Management

Education

Case or relevant caregiver should be informed about:

- Nature of infection
- Mode of transmission
- Personal hygiene including hand washing
- Good food hygiene. Reduce food handling time (from initial prep to service) to a minimum; keep perishable foods hot or cold.
- Educate food handlers about: strict food hygiene, sanitation and cleanliness of kitchens, proper temperature control, handwashing, and cleaning of fingernails; and the danger of working with exposed skin, nose or eye infections, and uncovered wounds.
- Care with food and water during travel to less developed countries

Investigation

For cases, complete enteric investigation form.

Exclusion/Social Distancing

Follow exclusion period guidelines for identified cases of infection in high-risk individuals (food handlers and caregivers), and individuals in daycare centres and schools.

Treatment

Not applicable

Immunization

Not applicable

Contact Management

Not applicable

Outbreak Management

Inquire about origin of implicated food and manner of preparation and storage before serving. Look for possible sources of contamination and periods of inadequate refrigeration and heating that would permit growth of staphylococci. Search for food handlers with skin infections, particularly of the hands. Culture all purulent lesions and collect nasal swabs from all food handlers.