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Please read this bit first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025.**

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

Cycle 22 Organism 8:

Bacillus cereus

Bacillus cereus has been recognized as an agent of food poisoning since 1955. Between 1972 and 1986, 52 outbreaks of food-borne disease associated with *B. cereus* were reported to the CDC, but this is thought to represent only 2% of the total cases which have occurred in that time. *B. cereus* causes two types of **food-borne intoxications** (as opposed to infections). One type is characterized by nausea and vomiting and abdominal cramps and has an incubation period of 1 to 6 hours. It resembles *Staphylococcus aureus* food poisoning in its symptoms and incubation period. This is the "short-incubation" or **emetic form** of the disease. The second type is manifested primarily by abdominal cramps and diarrhea with an incubation period of 8 to 16 hours. Diarrhea may be a small volume or profuse and watery. This type is referred to as the "long-incubation" or **diarrheal form** of the disease, and it resembles more food poisoning caused by *Clostridium perfringens.* In either type, the illness usually lasts less than 24 hours after onset. In a few patients symptoms may last longer.

B. cereus food poisoning occurs year-round and is without any particular geographic distribution. The short-incubation form is most often associated with fried rice that has been cooked and then held at warm temperatures for several hours. The disease is often associated with Chinese restaurants. In one reported outbreak, macaroni and cheese made from powdered milk turned out to be the source of the bacterium.

The diagnosis of *B. cereus* food poisoning can be confirmed by the isolation of greater than or equal to 10^5 *B. cereus* organisms per gram from epidemiologically implicated food. Underreporting of such outbreaks is likely because illness associated with *B. cereus* is usually self-limiting and not severe. In addition, findings of a recent survey about culture practices for outbreaks of apparent foodborne illness indicate that 20% of state public health laboratories do not make *B. cereus* testing routinely available.
Fried rice is a leading cause of B. cereus emetic-type food poisoning in the United States. B. cereus is frequently present in uncooked rice, and heat-resistant spores may survive cooking. If cooked rice is subsequently held at room temperature, vegetative forms multiply, and heat-stable toxin is produced that can survive brief heating, such as stir frying. In the outbreak described in this report, vegetative forms of the organism probably multiplied at the restaurant and the day care centers while the rice was held at room temperature.

The day care staff and restaurant food handlers in this report were unaware that cooked rice was a potentially hazardous food. This report underscores the ongoing need to educate food handlers about basic practices for safe food handling.

Questions:

1. What special procedures should apply to cooked rice to prevent the presence Bacillus cereus ‘food-borne intoxications’?
2. Is there a seasonable aspect for such food poisoning?