Investigate (food- and waterborne) outbreaks

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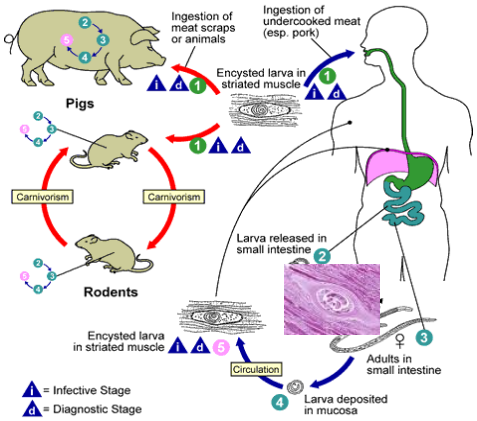

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At the end of the course, the student should be able to:

- Detect food- and water borne outbreaks
- Investigate an outbreak

What are foodborne disease outbreaks and why do they occur?

"Foodborne disease outbreak" means the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food.

The vast majority of reported cases of foodborne illness are not part of recognized outbreaks, but occurs as individual or sporadic cases

Why investigate outbreaks?

What are the most common foodborne diseases?

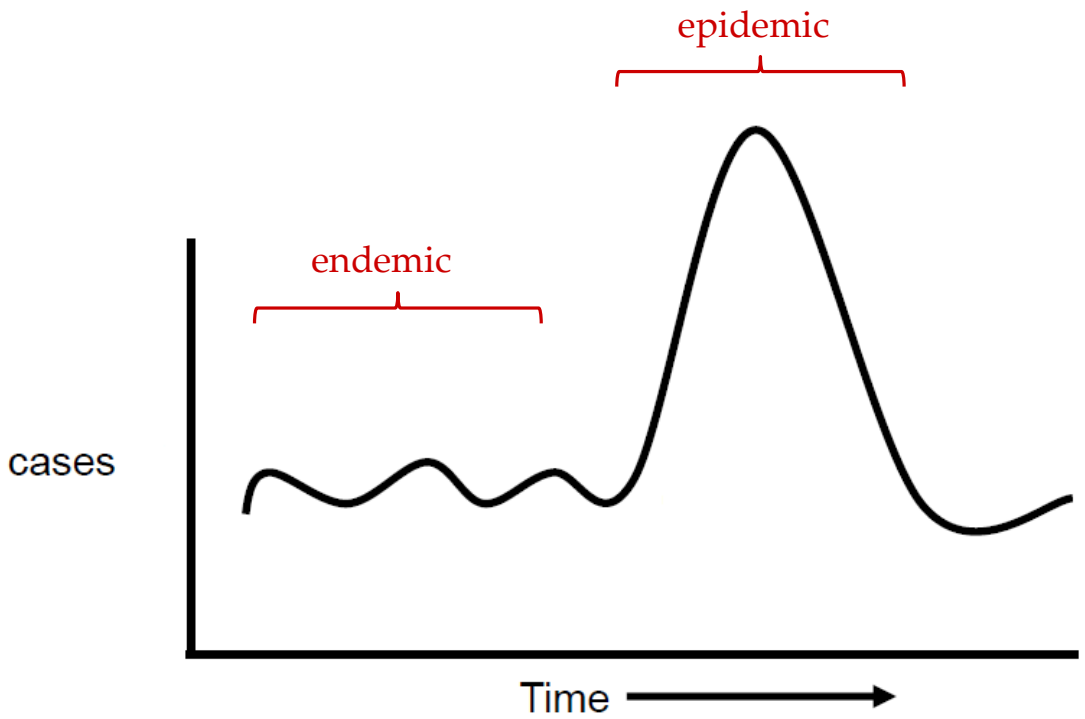
Reports from EVIRA

EFSA, ECDC. 2013. The European Union Summary Report on Trends and Sources of Zoonoses, Zoonotic Agents and Food-borne Outbreaks in 2011. EFSA Journal 2013,11(4):3129.

How are outbreaks of foodborne disease detected?

Surveillance, various ways:

- epidemic curves



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place: specific locations?

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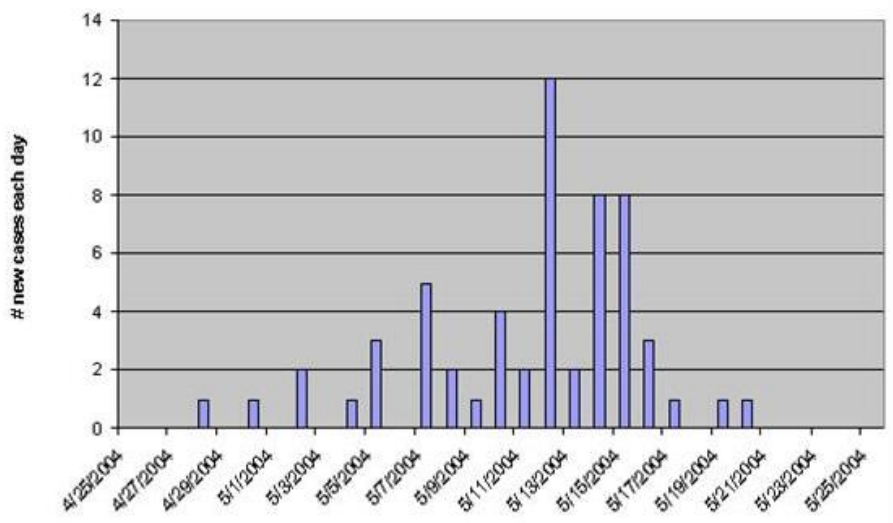

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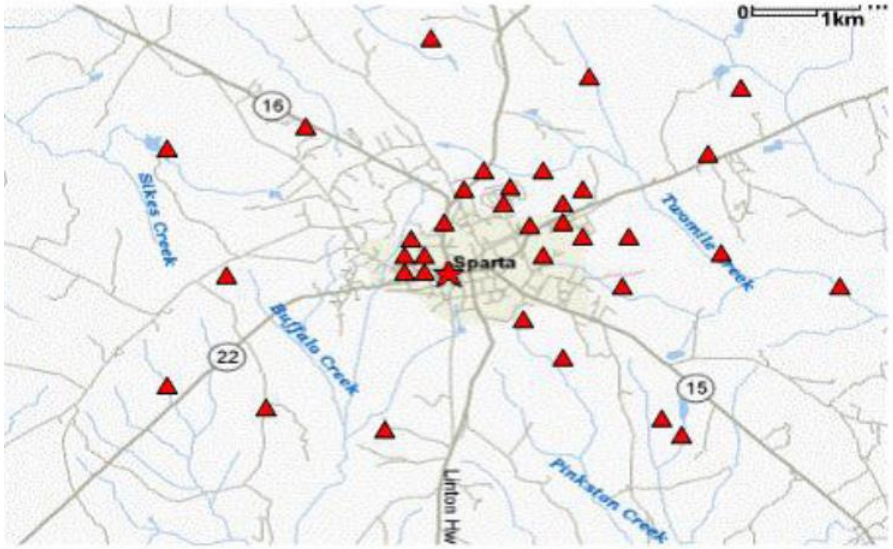

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Based on the information → Hypothesized which is the source

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Example:

An outbreak has occurred after a catered event.

Initial investigation suggested that mayonnaise sauce was eaten by at least some of the attendees

Interview 20 people, 10 became ill and 10 remained well

→ Identify the food implicated

How is a foodborne disease outbreak investigated?

Example:

Perhaps the mayonnaise was made using raw eggs

Possible to trace the eggs back to the market and to the farm

Test if chickens on the farm are carrying the same strain of Salmonella

Even without isolating microbes from food, a well-conducted epidemiologic investigation can guide immediate efforts to control the outbreak

How does a health department track foodborne diseases?

Surveillance

What foods are most associated with foodborne illness?

Raw foods of animal origin are the most likely to be contaminated

Foods that mingle the products of many individual animals (bulk raw milk)

Fruits and vegetables consumed raw