



FOCUS on Field Epidemiology

DISCUSSION QUESTIONS: Conducting Environmental Health Assessments

1. In this issue of FOCUS, the environmental health assessment activities described were specific to a food item implicated in an outbreak, and you were asked to see how many of these same activities might be used in the investigation of non-food vehicles.

For an intravenous medicine implicated in an outbreak of sepsis at a hospital,

- What steps might you go through to explore where/how the problem occurred?
- What product information would you collect?
- What activities would you observe?
- With whom would you talk?
- What records would you examine?

Environmental health assessments can be conducted in a huge variety of situations. In the case of an outbreak of sepsis, with the IV medication being the implicated vehicle, the same steps can be taken as would be taken in a foodborne outbreak.

The medicine itself could have been contaminated, which would require tracing back the medication from administration through preparation, storage, distribution from the manufacturer, practices of the supplier, etc. Or the IV tubing could be contaminated, which would also require trac-

ing back the handling of the tubing. For now, let's say the medicine itself was contaminated.

Product information would include the type of medication and concentration/amount, manufacturer, distributor, supplier, lot/batch number, ingredients, and dates of shipment and purchase. This same information would need to be collected from any substance that is added to the medication before it is administered (such as saline).

You would observe the preparation and administration of the medication to see how and where it (and any additives) is stored, where and how it is mixed (if necessary), how tubing, needles, and tape are handled, and how the medication is administered.

You would talk with those who perform any of the above activities, particularly if you do not have the opportunity to observe them actually performing the activity. Ask specifically about procedures used during the time of the outbreak.

You would examine records of purchase, supply/pharmacy records, bills of lading (for information on the supplier and/or distributor), standard operating procedures for preparing/administering this medication, and records that note use of the medication and who administered it. You could also examine patient records to find who was given the medication, but this falls more in the realm of an epidemiologic investigation.

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2. There is an outbreak of Hepatitis A among students eating at the cafeteria of a local secondary school. Given this situation, how would the environmental health assessment differ if the traceback investigation implicated...

...mixed green salad made at a local deli

...fresh strawberries from a farm in Minnesota

...pre-packaged sandwiches purchased through a broker from a company in Mexico

The environmental health assessment should be undertaken at the location or point in the chain of production implicated by the traceback investigation.

For a mixed green salad made at a local deli and pre-packaged sandwiches from Mexico, the food item itself could be contaminated through ill foodhandlers or through exposure to fecal matter (i.e. lettuce grown in a field irrigated by contaminated water).

- Describe the implicated food – List the ingredients in the salad (kinds of lettuce, other vegetables or add-ins, dressing, if any). Obtain a copy of the recipe if one exists.
- Observe procedures to make food - Find out where component foods are stored, how they are prepared, washed, sliced, etc; how the components are put together; and how the final product is stored.
- Talk with foodhandlers and managers - Find out the food preparation schedule and who prepared the implicated salad (or touched the sandwiches). Collect information about the foodhandlers, such as use of gloves, handwashing practices, and recent illnesses. Ask about standard operating procedures including sick foodhandler policies and food safety education of

employees.

- Take measurements – Measure the temperature at which the sandwiches or salad components and the final salad are kept; the pH or other conditions of dressings, if the salad is dressed at the deli.
- Collect specimens – Take a specimen of the salad and sandwiches, if available.
- Collect documents on source of food – Find out where the lettuce and other components of the salad were purchased, and gather any other information that will help determine the source of the veggies.

For fresh strawberries from a farm in Minnesota, the procedures noted above can be modified slightly to fit the circumstance.

- Describe the implicated food – Describe the strawberry farm and location.
- Observe procedures to handle the food - How are the strawberries grown, irrigated, harvested, sorted and stored? Find out if there is potential for contamination from sewage or infected farm workers at any point.
- Talk with workers and managers - Find out the work schedule and who has direct contact with the strawberries. Collect information about the workers such as recent illnesses. Ask about standard operating procedures including sick worker policies and food safety education of employees.
- Take measurements – Measure the temperature at which the strawberries are washed and stored.
- Collect specimens – Take a specimen of the strawberries, if available.
- Collect documents on source of food – This may only be applicable if the farm buys strawberries from other farms as well.