



FOCUS on Field Epidemiology

DISCUSSION QUESTIONS: Mapping for Surveillance and Outbreak Investigation

1. Have you or your team ever used mapping as a public health tool? Please describe.

Your experience using mapping in your community or region will be unique. You and your colleagues may have used maps to assist with an outbreak investigation, to carry out a community health assessment, or to conduct routine surveillance activities. Your group may have used simple paper maps or utilized computer software such as geographic information systems (GIS).

Some things to recall are how mapping enabled you to:

- optimize data collection and management;
- strengthen data analysis;
- monitor disease spread;
- target interventions; or
- present information to the public and/or decision makers.

2. For an investigation of an outbreak of a mosquito-borne illness, how would you incorporate GIS into your investigation? What map layers might you need to create?

As discussed in the West Nile virus examples in this issue, GIS can be helpful in tracking vector-borne illnesses.

For an outbreak of a mosquito-borne illness, at minimum you would want to include a street layer (possibly based on census tracts) noting the addresses of infected case-patients to see any geographic correlations such as clusters in a particular neighborhood.

You would also likely want to include one or more layers noting environmental conditions that could allow mosquito breeding. These layers could include water features, precipitation maps, temperature maps, and elevation maps. Such information could be used to measure case-patient proximity to mosquito breeding grounds and target mosquito control measures.

Additional map layers identifying population density can be used in conjunction with environmental layers to identify populations at risk and target educational interventions. Information from veterinary or agriculture sources documenting any infections in sentinel species might be useful as well.



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