



衛生防護中心
Centre for Health Protection

Scientific Committee on Infection Control

Recommendations on Laboratory Testing in Outbreak Investigation

1. In any episode of suspected outbreak, the clinical microbiologists are responsible for analysing clinical and environmental samples to detect agents of illness. They should be consulted as soon as possible:
 - To advise on collection of appropriate specimens and from whom the specimens should be collected,
 - To perform or arrange for another laboratory to perform the appropriate microbiological investigation to identify the causative agent,
 - To advise on appropriate microbiological investigation on environmental samples including food and water if indicated,
 - To arrange for typing of organisms which will discriminate between similar but distinct strains which might otherwise be mistakenly thought to be related.
2. When a decision is made to initiate an outbreak investigation, obtaining suitable samples and submitting them immediately to the laboratory is of high priority in the early stage of the outbreak. In general, specimens for direct detection and for culture of the organisms should be taken only from those with acute illness. Paired samples of acute and convalescent sera may also be useful for the investigation. Whether the specimen is from a case or from asymptomatic person should be clearly stated.
3. The outbreak investigation team should communicate with the laboratory before the submission of the batch of specimens related to the outbreak. The Infection Control Officer (ICO)/epidemiological staff are primarily responsible to ensure that the appropriate numbers



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and types of specimens are collected. This includes clear communication to the frontline clinical areas on the person authorized to order the tests, the criteria for ordering and to whom the results ought to be directed. If specific expertise in this regard is needed, the ICO/ epidemiological staff must be ready to request for assistance and consultation. Whenever requested, a clinical microbiologist from a reference or another laboratory may be recruited to participate in the process. If a specimen is particularly crucial to the investigation, steps must be taken by the ICO/ epidemiological staff to ensure that the optimal routing and handling of the specimen is taken to expedite the process. The ICO/ epidemiological staff must also ensure that the line listing of all cases with specimens taken be transmitted to the investigating laboratory to facilitate laboratory efforts to compile outbreak information in a useful format.

4. Infection control measures should be implemented immediately based on clinical diagnosis and epidemiological assessment. It is not necessary to have microbiological confirmation before implementing intervention.
5. Outbreaks of unknown aetiology present special challenges. Assistance from other laboratories or experts may need to be sought early if disease presentation is in any way unusual and no agent could be identified. It is important that the laboratory is kept informed on how the outbreak evolves, and the results of clinical and epidemiological investigations.
6. Once the aetiological agent is identified, appropriate transmission based precautions should be instituted. Case definition could be refined and laboratory testing on epidemiologically linked cases is not usually required for further management of the outbreak.

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