Operations Research Seminar

Syndromic Surveillance—The Right Answer to the Wrong Question

Manfred Green

Tel Aviv University, Israel

Background. Increasing concern about the threat of bioterrorism has stimulated efforts to improve infectious disease surveillance and develop greater capacity for early detection and control of outbreaks. Substantial resources have been invested in the development of sophisticated electronic reporting systems, based on non-specific syndromic signs and symptoms. The efficacy and usefulness of syndromic surveillance systems is still being debated.
Aim. To assess conditions under which syndromic-type surveillance may be effective for the detection and control of infectious disease outbreaks resulting from category A bioterrorism agents.
Methods. The potential efficacy of syndromic surveillance for early detection was evaluated using models of outbreaks caused by bioterrorism category A agents. Different conditions were considered for anthrax and plague.
Results. Based on the fundamentals of the natural history of the diseases and on simulated outbreaks, syndromic-type surveillance is unlikely to detect outbreaks caused by bioterrorism category A agents, prior to clinical and laboratory diagnoses of the early cases. However, it can provide critical, timely information on the location and spread of the outbreak and predictions on its ultimate extent.
Conclusions. Syndromic surveillance systems are not useful for early detection of bioterrorist initiated outbreaks. However, there is evidence to show that they can be useful as decision-support tools for the control of the outbreak. Emphasis should be placed on this aspect when developing or deploying such systems.

Date: Tuesday, September 9, 2008
Time: 15:00-16:00
Location: GL-286