Letters to the Editor

A Pseudo-outbreak in a Nursing Home

To the Editor:

An outbreak of nosocomial infections is an important medical problem that has potential economic, legal, and political repercussions.' Infection control programs have evolved into powerful institutional processes with formal algorithms for the investigation and control of outbreaks. Once triggered, these algorithms must be observed until there is a high degree of certainty that the outbreak is resolved. We report a pseudo-outbreak of senile hemangioma that falsely triggered the infection control algorithms in a nursing home. The apprehension among staff proved difficult to halt and had costly ramifications for the nursing home.

In late 1989, a healthcare worker noticed numerous skin lesions on an elderly resident on a psychogeriatric ward of an 800-bed senior citizens home in Nova Scotia, Canada. Because the lesions had never before been noted, they were considered to be of recent onset and presumed to be of infectious or environmental etiology. Floor staff were alerted. Over the following two days, all 34 residents on the ward were examined and found to have a similar rash. Two staff members working on the ward also noted similar lesions on themselves, strengthening the impression of an outbreak. Other than the presence of skin lesions, there were no symptoms or signs among residents or staff.

One elderly resident was examined by a dermatologist on day 2 of the outbreak. The initial clinical diagnosis was senile hemangioma. However, nursing home staff were adamant that the lesions had developed suddenly and in other residents as well. The differential diagnosis, therefore, included acute infections.

The apparent rapid spread and high attack rate of the skin lesions prompted the notification of public health authorities and an infectious disease specialist on day 3. On investigation, an environmental toxin seemed a implausible etiology. Evidence against an infectious etiology included: no symptoms, signs, or laboratory results suggestive of infection; no change in the skin lesions over five days; the fact that eight of eight randomly chosen residents on the ward with no reported cases had similar lesions; and the fact that there was no known viral exanthem compatible with the physical findings, clinical progression, histology, and epidemiology of the lesions. Senile hemangioma was an entirely compatible diagnosis. It was concluded that there was a pseudo-outbreak of senile hemangioma. The cost of the investigation (including the consultants' time and the laboratory tests) was approximately $500.

Despite a rapid investigation and the discontinuation of outbreak measures on day 4, requests for work schedule revisions continued from staff throughout the senior citizens' home, and especially by pregnant staff members. Staff providing daily care were suspicious and fearful of exposure to a pathogen as yet undiscovered by medical science. The investigators formally met with representatives of daily care, administrative, and nursing staff. Our assertion that the lesions were likely present long before observation was greeted with skepticism. The estimated cost of the pseudo-outbreak to the senior citizens' home was $10,000 in five days, mostly caused by work schedule revisions.

Outbreaks of senile hemangioma among hospitalized patients or nursing home residents have been described.[2,3] Several types of errors contribute to the labelling of the occurrence of senile hemangioma as outbreaks. Initially, there was a mistaken belief that the lesions were of recent, rapid onset. This led to a false label of "disease," suggested an infectious or environmental etiology, and may have triggered outbreak algorithms. The impression of an outbreak was then propagated and compounded by diagnosis suspicion and ascertain-

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ment biases.

Risk factors, the types of infection, organisms, patterns of transmission, and the nature of the nursing home staff all have an impact on the priorities of infection control programs in nursing homes.[4] Outbreak protocols may be implemented prematurely, on the basis of a set of circumstances that would not result in the same decision in an acute-care hospital. In our pseudo-outbreak, the nursing home was dependent upon external sources of expertise, such as public health and infectious disease consultants, resulting in delays in outbreak assessment.

Nursing home staff is largely composed of caregivers who have little medical training and who are uninitiated in scientific methodology. In our pseudo-outbreak, the presence of an investigation team was an unusual event that actually may have fueled fears among staff. Lack of evidence, as a means of refuting the existence of an unknown pathogen, was confusing and viewed suspiciously. Our findings also were difficult to accept from a psychological point of view. In effect, the staffs power of observation was being questioned. Acceptance of our conclusions amounted to a loss of face.

This pseudo-outbreak demonstrates the momentum of the infection control ethic, once triggered. The experience highlights the need for effective communication regarding infection control principles to caregivers with little medical training.

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Correction

Nathan L. Belkin, PhD, is no longer affiliated with Superior Fashion Seal as indicated in his August Letter to the Editor (1991;12:464-466).

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