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INFECTION CONTROL

LETTERS TO THE EDITOR

Published Data Questioned

To the Editor:

In Hegger et al's report, "Transient and resident microflora of burn personnel and its influence on burn wound sepsis," the authors state that auto-contamination via the urinary tract was responsible for 27.6% of the burn wound sepsis. If 29 patients with wound sepsis were studied and seven had the infecting organism in their urinary tract, the incidence is only 24.1%.

Secondly, Table 3 lists 27.6% as the incidence for the gastrointestinal tract. Unless these patients have cloacas, they are not the same tract. Which is it?

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Dr. Heggers, author of the article in question, was invited to respond to Ms. Scheidt's comments.

I appreciate Ms. Scheidt's comments concerning our results on auto-contamination.

Apparently, in my haste to return the galleys to the publisher, I failed to realize that an incongruity existed. After careful review of our data, I found that eight patients instead of seven out of 29 had the infecting organism. Consequently, the percentage incidence is correct. With regards to the term gastrointestinal tract, your observations are correct. It was an oversight on *our* editorial review; the correct term for Table 3 should be Urinary Tract instead of gastrointestinal.

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Catalytic Models in Hospital Epidemiology

To the Editor:

The interesting study by Chavigny and Fischer in the January-February 1983 issue of *Infection Control* demonstrates a relatively simple sampling strategy for studying the epidemiology of hospital infection.[1] A different approach of their data may result in more quantitative conclusions, especially regarding the rates of nosocomial infections in relation to the length of hospital stay (LOS).

By applying a catalytic model, as originally employed by Muench[2] for cross-sectional (point-prevalence) surveys to their data, a force of infection may be calculated. The force of infection is expressed as "effective contacts" per patient per time unit. An effective contact is defined as a contact that would lead to an infection in a susceptible (ie, previously not infected) person. According to Muench, the application of the catalytic model is based on a set of assumptions. These are represented here with slight modifications and additions to accommodate the above-mentioned survey. These assumptions include:

a. a population entirely susceptible at the start (ie, at admission)
b. a constant force of infection, measured in number of "effective contacts" per patient per time unit, no matter how complex may be the events leading up to these contacts.
c. evidence that infection has taken place, allowing for an estimate of the rate of infected patients (y) at any time (t) (ie, in this study, at the end of hospital stay)
d. all individuals sampled have spent their entire stay in the community (ie, in the hospital)
e. forces of infection have not varied greatly over a fairly long period, long enough to include the whole period of stay of all individuals entered in the study
f. mortality due to the infection is negligible; for the present study this should be read as: LOS is not greatly influenced by the infection.
g. evidence of exposure is definite and remains so until the end of the observation period.

Most of these assumptions (especially c and g) seem plausible for the hospital infections and sampling strategy under discussion. A possible exception are b and f (discussed below).

First, we will try to apply the catalytic model based on these assumptions. The model predicts that the relation between the rate of cases/patients