Clostridium difficile Associated Diarrhea

To the Editor:

Clostridium difficile-associated diarrhea and colitis is frequently noted in patients receiving antibiotic therapy in hospitals[1] and chronic-care facilities.[2] The organism is usually acquired nosocomially through human contact or from the hospital environment that is frequently contaminated with *C difficile* spores.[3] Immunoblot typing has been used to demonstrate nosocomial infection.[4]

As part of an investigation of an outbreak of C difficile-associated diarrhea, we studied the possible role of rectal thermometers as a source of nosocomial transmissions. Over a one-month interval, a total of 72 electronic rectal thermometers and 16 electronic oral thermometers were tested for *C difficile.* The portion of the handle nearest the base of the disposable plastic temperature probe sheath was sampled using a sterile moist swab that was then inoculated into chopped meat broth containing cefoxitin (40 μg/ml) to suppress contaminants, and sodium taurocholate (1 mg/ml) to promote spore germination. Alter 24 hours of incubation, the broths were screened for *C difficile* antigen (Marion Latex Test), and those that tested positive were futher evaluated by *C difficile* isolation and identification.

Fifteen of 72 rectal thermometers (20.8%) were positive for C *difficile* antigen, and of these, seven were confirmed by isolation and identification of the organism. The remaining eight specimens were overgrown with enterococcus, which interfered with the attempted isolation of *C difficile.* None of the oral thermometers were positive for *C difficile* by the antigen screen.

Electronic rectal thermometers, which are used extensively in many institutions, are designed for multiple patient use. Our study shows that the handles often become contaminated with *C difficile* spores. Although the temperature probe is covered by a disposable plastic sheath that is changed between each patient, the newly installed sheath may be easily contaminated by hand carriage of spores from the handle of the thermometer.

Insertion of a temperature probe carrying *C difficile* spores directly into the rectum might be a mechanism of nosocomial transmission of the organisms between patients. Thorough cleaning of the handle of the thermometer between patient use may help reduce the transmission of *C difficile* by this route.

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https://doi.org/10.1086/646096 Published online by Cambridge University Press