

Sharing hospital rooms may raise infection rates

Wednesday, January 06, 2010

Each person who shares your hospital room raises your chance of catching a life-threatening infection by at least 10 per cent, new Canadian research shows. The only solution, according to the study, is an expensive one: build private rooms for all, especially in intensive care. The Queen's University findings apply to common drug-resistant infections, or superbugs — *C. difficile*, methicillin-resistant *Staphylococcus aureus* (MRSA), and vancomycin-resistant *Enterococcus* (VRE).

In Canada, an estimated 225,000 hospital-acquired infections occur each year, causing 8,000 to 12,000 deaths.

"A private room is more costly to build in a hospital. However, if it saves on infections . . . then clearly it's worth the expense," said Dr. Dick Zoutman, an infectious disease specialist at Queen's, in Kingston, Ont.

"So we decided to look at whether the number of roommates you have in hospital correlated with the risk of getting the Big Three superbugs."

He studied records of 17,200 patients admitted to Kingston General Hospital over six months.

"What we found surprised me because of the strength of the relationship" between infection risk and number of roommates. "Your risk of infection with one of those three superbugs went up 10 per cent per roommate for each of the three infections." (In some cases, it was slightly above 10 per cent. Patients exposed to six roommates during their stay had a risk 77 to 90 per cent higher than those in private rooms.) That means a double room is worse than a single, and a ward of

four beds is worse again. As well, a person who changes roommates has more risk than a person who has one roommate through his or her hospital stay.

Zoutman notes that the turnover of patients "tends to be pretty quick . . . When you're in a hospital in Canada, you're going to meet a lot of new people if you're not in a private room."

Meanwhile, a recent Irish study appears to have found just why superbugs are so prevalent in hospitals: the hospitals' own disinfectant actually creates more of these antibiotic resistant germs. In findings published in the January issue of *Microbiology*, scientists at the University of Ireland in Galway found that a full-strength disinfectant containing benzalkonium chloride kills bacteria.

But they found that when the disinfectant is diluted (perhaps in a bucket of wash water), some bacteria survive, building up resistance not only to the disinfectant, but also to an important antibiotic, ciprofloxacin. The study's authors do not know why this happens and they plan to expand the investigation to other bacteria. In the Queen's University findings, Zoutman says how infection spreads in a hospital is still a bit uncertain, but he leans toward shared bathrooms and furnishings. "And we know that hand-to-hand contact spreads a lot of these infections."

Hospital patients are prone to infection because they have surgical wounds or IV tubes that allow bacteria to get inside the body. They have immune systems weakened by disease or chemotherapy. Once built and equipped, the private rooms shouldn't be more costly to operate, the doctor believes — even less costly, as infection is reduced.

"It's important to have this kind of evidence because those who fund hospitals — governments — need the evidence to make the best possible decisions.

"I'm saying that the best possible decision is that we build our hospitals with private rooms."

Zoutman's co-authors are graduate student Meghan Hamel and epidemiologist Christopher O'Callaghan. He plans to pass on the study's findings to government

health ministries and agencies "so that when hospitals come to them and say, 'We want to build a new wing or a new hospital, and we'd like to go for private rooms,' (then) we can start to make this our standard of care in Canada."

© Copyright (c) Canwest News Service Ottawa Citizen