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# Researcher surveys infection control practices for home patients

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A healthy boy was infected with antibiotic-resistant bacterium that was traced to his mother's nurse's bag left in the family's car after his mother's home healthcare visit to a patient with the same infection. Although the boy's infection and the patient's infection were never DNA tested, the coincidence was remarkable.

This event illustrates how bacteria from someone sick can infect others, said Irena Kenneley, assistant professor of nursing at the Frances Payne Bolton School of Nursing at Case Western Reserve University.

She conducted a survey of home healthcare practices related to infection control. Kenneley reports in the April issue of the peer-reviewed journal, *Home Healthcare Nurse*, that home healthcare workers report that, like the boy, they have acquired infections and that the practices to prevent these infections varies from one agency to another.

Kenneley said information is not available about how often these infections spread from house to house and between patients and families. With a 22-item survey sent or posted online to 3,800 home healthcare providers, Kenneley began to find information about infection control, safety practices and healthcare agency policies.

Kenneley received 423 responses from 44 states (389 were registered nurses between the ages of 51 and 60) about agency policies for: isolating infected patients, leaving necessary equipment like stethoscopes in the home, teaching families about preventive actions, and taking the

nurse's bag into the nurse's own home when infections are known to be present in residences visited earlier in the day.

She also asked the home health care providers whether their agencies had a dedicated infection prevention and control nurse. If so, she also asked whether this individual is devoted full-time to prevention or has multiple duties within the agency.

Kenneley noted that individuals also could provide narrative material like the story of the boy getting an infection from his mother's bag.

Of the responders, 21 (5.9 percent) reported receiving treatment for a bacterial infection confirmed by lab tests and doctors. Most infections were to the skin or soft tissue, with gastrointestinal infections following.

The organisms responsible for these healthcare-associated infections in the home healthcare clinician population were Methicillin Resistant Staphylococcus aureus (MRSA) and Clostridium difficile (C. diff). Not surprisingly, these are the most common organisms isolated from patients who received a healthcare associated infection in the acute and long-term care settings.

Nearly 60 percent of the survey respondents reported that their healthcare agency did not have written policies about handling infection control when antibiotic-resistant infections were known. These results were unexpected and worrisome due to the increase in multiple drug resistant organisms with no new antibiotics in the pipeline.

Home healthcare poses challenges that differ from the controlled environments of the hospital. Patients with open wounds or catheters freely move around the house, play with pets, garden and do other normal activities that can spread bacteria and viruses.

If a virus like bird flu becomes epidemic, Kenneley said, most people will be treated at home. Officials need to develop and implement policies and practices on how to prevent the spread of the disease to healthcare workers and others in the home and community.

Kenneley explains that simple and quick actions can decrease infections—hand washing, vaccinations and patient isolation.

Strict hand washing and gowning procedures in hospitals have reduced bacteria spreading from room to room. Hospitals across the country reported that they reduced their MRSA and C. diff rates by observing hand washing in the clinical setting, and targeting education to clinicians regarding correct isolation procedures. (do you have a number for that reduction?)

Bacteria, which can live on surfaces for weeks and even months, can be transported to the environment of one home to another on a medical bag or equipment—or like the healthy boy to his mother's car.

Elaborating, Kenneley pointed out that numerous studies have indicated contamination rates of various surfaces and equipment associated with the medical environment (including nurse's bags) across the length of care to be greater than 80 percent. After retrospective review of 10,000 ICU patients researchers in New York city found patients had significantly higher risk for acquiring MRSA or vancomycin-resistant enterococci (VRE) if the most recent occupant of the same room had tested positive for the organisms.

Explained Kennely, "It's important to prevent infections, because everyone is at risk from the healthcare provider, the patient, to the families of the patients and nurses."

She writes in the article, "Infection Control in Healthcare: Issues for

Patients and Providers," that "with ever-increasing shift of patients out of the acute care setting and into other settings, infection prevention and control programs must also shift focus."

Agencies and nurses don't always learn from hospitals that their new patients have come home with infections like methicillin-resistant Staphylococcus aureus (MRSA), Escherichia coli, Streptococcus, or Pseudomonas aeruginosa—many of which are antibiotic resistant. The healthcare team is also exposed to a number of viruses, such as the flu, chicken pox, hepatitis and polio.

"This makes it difficult when nurses come unprepared into an infectious situation," Kenneley said. "It's risky."

This issue isn't disappearing and the findings are important to the future direction of home healthcare, said Kenneley.

According to an April 2011 National Health Statistics Report from the U. S. Department of Health and Human Service (HHS), an estimated 1.45 million people received home health care in 2007. By 2050, HHS predicts that number will reach 27 million.

"Washing hands, which isn't done enough, is still the major way to prevent the spread of these infections," Kenneley said.

Nurses can also teach about the washing and caring of bed linens and disinfecting bedroom furniture and special equipment. Some agencies have policies about isolating the patient from the family to cut down on others getting infected.

The overall goal is to prevent infections from spreading, Kenneley said, adding some work is still needed to control infections in the home healthcare environment.