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Ways to Prevent Hospital Acquired Diseases

(06/24/2011)

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By Robert Kravitz

The word hospitalism was coined back in the 1830s by the Scottish doctor James Simpson. The term was developed to help identify a growing problem in many hospitals in northern Europe: people who acquired new diseases while in the hospital.

Today, we refer to such diseases as hospital acquired diseases, nosocomial infections, or hospital associated infections (HAI). Back in the 1830s, the prevailing theory as to the cause of HAI was poor ventilation and stagnant air. Because few doctors believed in germ theory, as it was called at that time, the way most doctors suggested addressing HAI outbreaks was to simply open the window.

Today, although we know much more about HAI, it is still a major problem in hospitals around the world. It is believed HAIs are incurred by as many as one in 20 patients admitted to hospitals, affecting more than 1.7 million patients each year. We also know that simply opening a window will do little to prevent HAIs.

Instead we now know that one of the key culprits for the spread of HAIs is lack of proper hygiene. In some cases, hospital staff have become complacent, not following proper hand washing protocol or exhibiting improper use or removal of gloves. In many, if not most, cases, HAIs are caused by inadequate or improper cleaning and maintenance of all types of hospital surfaces, most often patient bathrooms.

HAI Statistics

Before exploring ways to prevent HAIs, we should know a little more about them and their impact on hospitals and patients. For instance, in the United States, the cost to treat an HAI is more than \$40,000 per patient, and increasingly these costs must be absorbed by the hospital. Government agencies and many insurance companies will no longer cover the cost of treating HAIs.

Other HAI stats worth knowing include these:

Most patients who acquire an infection spend an extra 20 days in the hospital recovering.

Each year, 5 percent to 10 percent of the patients entering an acute care hospital acquire one or more infections there.

About 100,000 people die each year in the U.S. due to HAI.

HAIs are the sixth leading cause of death in the U.S.

As many as 70 percent of all HAI cases are preventable.

The commitment of all hospital and medical staff is needed to address the problem. Increasingly, prevention will be the job of hospital housekeeping and environmental services teams who now realize, more than ever before, that the goal of their work is to protect human health. Appearance, although still important, is no longer their paramount concern.

New Cleaning and Inspection Technologies

Because HAIs continue to be a menace, medical facility administrators and housekeeping staff may need to review all cleaning tasks, evaluating their

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cost and effectiveness. Some major changes may be necessary in some cases.

Studies presented at the nonprofit Cleaning Industry Research Institute report for instance, that some conventional cleaning tasks, such as mopping floors and using traditional cleaning cloths, actually spread as many pathogens that can cause HAIs as they remove. With mopping, this occurs even when using a double-bucket system, which is designed to keep cleaning solution, rinse water, and the mop itself cleaner and more hygienic.*

Several promising cleaning technologies have been introduced in the past decade that may help prevent HAIs. Some of these include the following:

Vapor technologies: These machines clean by releasing a mist onto surfaces such as bed rails, tables, countertops, doorknobs and window ledges. Cleaning chemicals, hydrogen peroxide, and disinfectants can be added to the solution to help kill bacteria.

Flat surface cleaning systems: These systems combine a chemical injection system, a microfiber wipe and a window squeegee to clean flat surfaces. The key benefit of flat surface cleaning systems is that they tend to speed up the cleaning process and do not spread contaminants from one surface to another the way cleaning cloths can. Additionally, studies indicate that microfiber cloths, mops and flat surface cleaning systems, can significantly reduce contaminants compared to traditional cloths or string mops.

Spray-and-vac cleaning systems: Initially designed for cleaning restrooms, these systems can now be used for a variety of cleaning tasks. With a spray-and-vac system water and/or cleaning solution is applied to surfaces.** If using chemicals, the chemicals must stay on the surface for a few minutes. The same areas are then pressure rinsed and the vacuum portion of the machine vacuums up any remaining moisture.

With these cleaning technologies, cleaning teams can now measure the hygienic effectiveness of their cleaning tasks to determine whether surfaces meet cleaning standards. Adenosine triphosphate (ATP) technology has been used for years to test if a surface is hygienically clean in laboratories, grocery stores, and other locations.

ATP is an energy molecule stored in all microorganisms. The technology does not detect specific organic substances but a high ATP reading is typically viewed as a warning that potentially harmful pathogens are present on a surface.

Cost Comparisons

There are many reasons why facilities have continued to select traditional cleaning tools. One is that they are known and have been used for years. Another is that, for the most part, they are inexpensive. A mop and bucket may cost less than \$40 dollars.

Selecting the new cleaning technologies mentioned here may cost more initially, but hospital administrators must decide if the added costs associated with the HAIs are worth the investment. If they help stop HAIs, then the answer is yes. Helping to make the added costs more palatable, most studies indicate that these systems reduce cleaning times—a labor savings that can result in a relatively quick return on investment.

*Studies indicate that we have as many as 50 direct and indirect contacts with floors every day. Each time we retrieve a purse, briefcase, or pen from the floor, we may come in contact with pathogens on the floor.

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**Some spray-and-vac systems do not need chemicals but have been labeled as "sanitizing devices," meaning they meet EPA standards for sanitizing without using chemicals.

Sources: Agency for Healthcare Research and Quality, part of the U.S. Department of Health and Human Services

