



ECRI UPDATE

An Undercover Hazard: “Clean” Mattresses Can Ooze Body Fluids onto Patients

A patient is lying on an apparently clean bed or stretcher when blood from a previous patient oozes out of the surface. Clearly, you don’t want to put your patients through that experience. But is your facility doing enough to prevent it?

For the second consecutive year, ECRI Institute addresses the topic of mattress and mattress cover contamination on its annual Top 10 list of health technology hazards. Obstacles to addressing the issue persist, prompting ECRI to not only retain the topic, but to rank it as the Number 2 hazard on its list for 2019. The nonprofit research organization produces its annual list to raise awareness about critical hazards associated with medical devices and systems and to promote solutions that can help prevent patient harm.

DANGER BENEATH THE SURFACE

A hospital bed or stretcher consists of a frame, a foam or air mattress, and a mattress cover. The mattress cover is designed to prevent body fluids and other contaminants from entering the mattress. During room cleaning, the mattress cover is cleaned and disinfected to prepare the bed or stretcher for the next patient.

Because it is protected by the cover, the mattress itself is not cleaned between patients. If, however, the integrity of a mattress cover is compromised, contaminants can

contact or seep into the mattress during patient care. These contaminants can remain on, or in, the mattress after cleaning, putting subsequent patients, as well as staff, at risk of exposure.

Examples exist of a patient lying on an apparently clean mattress when blood from a previous patient oozed out of the surface onto the patient. During a search of FDA’s Manufacturer and User Facility Device Experience (MAUDE) database covering the period from 2008 to June 2018, ECRI Institute identified five reports of patient bloodborne pathogen (BBP) exposure from contaminated mattresses. That’s in addition to the **more than 700 reports that FDA has received of mattress covers failing to prevent blood and other body fluids from leaking into mattresses.** (Reports span the six-year period from 2011 to 2016, as detailed in *FDA’s Covers for Hospital Bed Mattresses: Learn How to Keep Them Safe.*)

Additionally, the mattress cover itself could remain contaminated if the cleaning products or procedures used are not appropriate for the circumstances of use.

The actions required to protect patients and staff are straightforward: Mattress covers should be cleaned and disinfected between uses; they should be inspected for signs of damage between patients; and they should be discarded when they have exceeded their useful life. However, healthcare facilities can face some unexpected obstacles when trying to put these recommendations into practice.

OBSTACLES TO MATTRESS COVER CLEANING AND DISINFECTION

Adequate cleaning and disinfection requires the use of appropriate cleaning products and procedures for the types of contaminants present. Failure to do so can result in contaminants remaining on, or within, the mattress or cover. For example, using a tuberculocidal product would not be an effective disinfectant for covers contaminated with bacterial spores.

In addition, the use of products or procedures that are incompatible with the mattress cover material could cause immediate damage to, or degradation of, the mattress cover. Such damage could allow the mattress underneath to become contaminated during subsequent use.

There’s always the risk that staff will either knowingly disregard the cleaning instructions or mistakenly use inappropriate cleaning and disinfection methods. Providing comprehensive training and supplying appropriate cleaning and disinfection products are key steps to reducing that risk. Also important, however, is raising awareness about the hazard. Staff need to be educated about the consequences of improper cleaning: patients and staff can be exposed to infectious materials.

Another potential challenge, however, is that not all mattress cover suppliers recommend products and procedures that will successfully remove the likely surface contaminants without compromising the cover’s integrity—that is, creating weak spots that could allow leaks. In this situation, healthcare facilities can’t be sure which products and

