

Infection Control and Prevention through Fabric Technology

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In 2013, the U.S. Food and Drug Administration (FDA) warned about the infection control risks of damaged hospital mattress top covers.¹ A 2018 study published in the *New England Journal of Medicine* noted that hospital-acquired infections had fallen dramatically over a four-year period, but that new prevention strategies were needed to combat bacterial pneumonia and *Clostridium difficile* (*C. diff*)—which remained largely unchanged.²

Sizewise estimates that an average of 329 patients lay on a single hospital mattress during its lifespan. With that in mind, it's important to understand how today's medical fabric technology and advanced manufacturing techniques can help support infection control and prevention strategies.

Two thousand holes per mattress

Historically, medical mattresses have been sewn together in the same way consumer mattresses are built: with a sewing machine that punches about eight needle holes per inch.³ For the top cover material on a typical 35"x80" mattress, that's 2,064 holes! And every hole in the fabric invites potential infection into the foam or other components.

Certain high-tech fabrics are able to be welded rather than sewn—which eliminates needle holes altogether. These fabrics are also more chemical resistant, boosting product durability under hospital

cleaning protocols. Finally, some mattresses now have an internal liner which protects the mattress components in the event of top cover damage.

FDA recommendations

In its 2013 warning, the FDA recommended hospitals implement a four-part plan to prevent the infection risks of damaged mattresses:⁴

1. **Develop an inspection plan** for all mattresses and mattress covers
2. **Inspect** regularly and check for signs of damage or wear
3. **Remove and replace** damaged, worn, or stained mattresses and mattress covers
4. **Maintain:** clean and disinfect according to manufacturer's guidelines

Mattress Audit Program

Sizewise offers a free Mattress Audit Program to identify potential problems within your inventory and help extend the life of your mattresses—no matter the manufacturer. The audit includes thorough inspection of a select number of assets and documentation of their condition.

References:

1. Covers for Hospital Bed Mattresses: Learn How to Keep Them Safe. (2013). Retrieved from www.fda.gov/medical-devices/hospital-beds/covers-hospital-bed-mattresses-learn-how-keep-them-safe
2. Magill, S et al. (2018, Nov. 1). Changes in Prevalence of Health Care-Associated Infections in U.S. Hospitals. *The New England Journal of Medicine* 2018; 379:1732-1744.
3. Q&A with Craig Miller, Jr. (2014, Apr). Xtrawise: The Risk in Damaged or Worn Covers For Medical Bed Mattresses: An FDA Safety Communication.
4. Keeping Patients Safe from Contaminated Mattresses. (2013). Retrieved from www.fda.gov/media/109132/download

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