**Infection control**

**Oversee cleaning of linens and protect from contamination to avoid costly infections**

Infection control professionals need to ensure that the linens used in hospitals are properly cleaned, transported, and stored to avoid contamination and costly infections. Proper care can help maintain patient safety and reduce healthcare costs.

Understand the requirements necessary to ensure linen are cleaned, transported and stored appropriately in order to avoid contamination, which can lead to dangerous and costly infections within the hospital.

Hospital linen, which comes into contact with patients most frequently as bed sheets or blankets, have specific cleaning requirements before soiled items can be considered safe for reuse within the hospital, says Carol McLay, DrPH, RN, CIC, infection prevention consultant and chair of the Communications Committee for the Association for Professionals in Infection Control and Epidemiology (APIC).

*(see *linens*, p. 4)*

**Life safety**

**Help contractors understand fire safety requirements of a project before work begins**

Increase oversight of external contractors and consider investing in consulting help for major projects to avoid Life Safety Code violations concerning fire barrier integrity.

The Joint Commission cited about 48% of hospitals surveyed in 2013 for issues related to Life Safety standard **LS.02.01.10**, or the *(see *fire safety*, p. 6)*

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Facilities management

Better documentation translates into better utilities compliance

Tighten up paperwork practices to avoid RFIs for mismanaging utilities and associated risks. Chances are the proper policies are in place but are simply not understood or followed by staff, experts say.

Violations related to Environment of Care standard EC.02.05.01 for managing utility risks lead to RFIs in 47% of hospitals surveyed in 2013, according to information released by The Joint Commission (TJC). That was up from 34% of hospitals scored under that standard in 2012.

There are three Elements of Performance (EPs) that cause the most problems, says Jonathan Flannery, a health care engineer and senior associate director of advocacy for the American Society for Healthcare Engineering, a Chicago-based nonprofit organization. They are:

- **EP 5**: Hospitals must minimize “pathogenic biological agents” in cooling towers, hot- and cold-water systems, and other aerosolizing water systems.
- **EP 6**: In areas designed to control biological agents, gases, fumes, dust or other airborne contaminants, the ventilation system must provide appropriate filtration, pressure relationships and air-exchange rates.
- **EP 13**: A hospital must respond to disruptions of its utility system as described in its procedures.

Shore up documentation to address all three issues and improve compliance and performance. In some cases, the language in Joint Commission (TJC) standards can be vague, which means hospitals must establish practices based on their own situation and then make sure that expectations are clear to facilities staff, nursing staff and others as appropriate.

**EP 5: ‘Follow the policy’**

Under EP 5, problems typically occur as a result of “failure to follow your own policy,” Flannery asserts.

“Sometimes the nursing staff doesn’t know what they’re supposed to be checking,” Flannery says. “If you haven’t trained staff or there’s no documentation that this is being monitored, you get written up.”

Make sure you have an accurate inventory of water systems that fall under the standard and a policy guiding their maintenance. Then simply communicate the organization’s requirements to the nurses, maintenance personnel or whichever parties are tasked with carrying out the physical checks.

Those checks can include inspecting the equipment, maintaining hot and cold water at certain temperatures as determined by hospital policies, and other factors.

Situations and policies will differ from facility to facility. What’s important is that staff execute what the hospital’s policy stipulates, and that the execution is documented for surveyors, Flannery says.
**EP6: Find the proper balance**

The greatest challenge for most hospitals is EP 6, observes John Rosing, vice president and principal at Patton Healthcare Consulting based in Glendale, Ariz. “Hospitals are complex structures, with different HVAC systems built in different areas, by different architects and engineers, and under different codes,” Rosing notes.

Problems with air exchange rates or pressure relationships occur when systems become “unbalanced,” Rosing says. This primarily occurs when staff members fail to adjust systems during seasonal changes or “just over the course of time,” he says.

Creating further challenge is that the commission has recently started taking a closer look at whether hospitals are regularly verifying air-pressure relationships and other factors under EP 6 where they are required, such as in special rooms like operating rooms or rooms for patients suspected of having communicable diseases.

Testing is not explicitly required by the EP language, but is something surveyors are looking for more frequently, Flannery says. “The standard doesn’t say you have to verify the air-pressure relationships on a regular basis, but now hospitals are having to do that,” Flannery says. “You have to figure out your own needs and build procedures around it.”

If necessary, start by establishing guidelines for air-exchange rates with the code books of the Facilities Guidelines Institute or ASHRAE (formerly known as the American Society of Heating, Refrigerating and Air-Conditioning Engineers). Then, collect data on actual rates to determine how frequently to test.

“You adjust your experiences and what you are doing based on the evidence you get,” Rosing says. “You may need to inspect more, or you may need to remodel.”

Consider these tips from Rosing:

- **Test monthly.** Though the frequency of inspection on exchange rates, pressure relationships and the other factors may differ based on a facility’s needs, do so at least once a month.

- **Inspect air filters.** Pay attention to air filters, noting how long it takes for them to clog and changing them promptly once clogged.

- **Customize procedures.** Determine whether any specific requirements are needed (such as keeping the door closed) to achieve proper results.

- **Watch the weather and the calendar.** Adjust HVAC systems with the changing of the seasons.

- **Go for accuracy.** Test air pressure relationships using a room pressure monitor, rather than a more “crude” test like the “flutter test,” which involves holding a tissue in front of the crack under a room door to determine which way the air is moving. The latter may not reflect the true picture in the same manner as a monitor, which does so over time.

**EP 13: Document disruptions**

Thoroughly record every aspect of any disruption in utility systems to avoid unnecessary findings under EP 13. This could be anything from a sewer line break to a brief loss in electricity.

“Even if you have just a short power outage and you don’t document thoroughly, that will cause problems,” Flannery says.

Things to document during a utility disruption, Flannery says, include:

- The exact nature, cause, and duration of the disruption;
- Who responded to the disruption, and how it was managed or resolved;
- Who the outage was reported to internally (a safety committee, environment of care committee, or another group or leader); and
- Future plans for resolving or preventing similar disruptions. — Scott Harris (scottharriswriter@gmail.com)

**Environment of care**

**New EPs align TJC standards with CMS rules on alternative maintenance**

The Joint Commission has announced two new elements of performance (EPs) to its Environment of Care chapter of standards following a CMS survey and certification letter in December that relaxed some maintenance, inspection and testing rules for hospital equipment.

The two new EPs, which apply only to hospitals that use The Joint Commission (TJC) accreditation to participate in Medicare, are effective July 1 and will be in the 2014 Spring electronic update of the standards hospital accreditation manual, according to information released by the commission on May 1.
The CMS survey-and-cert memo allowed hospitals to establish an Alternative Equipment Management program for testing, maintenance and inspection of both medical and facility equipment that was based on hospital experience with equipment, not just manufacturer's recommendations as had earlier been required. TJC has long allowed hospitals to use information other than manufacturers’ recommendations, as long as they could document a good case for doing so (ECL 1/20/14).

While easing some rules, CMS said it was still requiring manufacturers’ recommendations to be used when it came to things such as imaging/radiologic equipment, medical laser devices and new equipment without a “sufficient amount of maintenance history.”

The first EP added to align with CMS is under EC.02.04.03, which requires hospitals to inspect, test and maintain medical equipment. EP 24 says that hospitals must use manufacturers’ recommendations with medical lasers, imaging and radiologic equipment and any new equipment without sufficient maintenance history.

The second new EP is under EC.02.05.05, which requires hospitals to inspect, test and maintain its utility systems. EP 6 says hospitals should use manufacturers’ recommendations on “new operating components of utility systems” when maintenance history is insufficient to “support the use of alternative maintenance strategies.”

Both EPs also offer examples of what TJC considers documented evidence of maintenance history.

The new EPs can be found online: http://tinyurl.com/TJC-equipment-2014 — A.J. Plunkett (aplunkett@decisionhealth.com)

'Check Every Step'

The Healthcare Laundry Accreditation Council (HLAC) is currently the leading accreditation body for health care laundering facilities, and one that McLay recommends. “They go into the laundering facilities and they check every step of the process to verify that they’re doing exactly what they need to be doing.”

If your hospital cannot contract with an accredited laundering facility in your area, however, take care to maintain oversight of the facility that you do employ. Some hospitals contract out to local launderers “and they have absolutely no oversight on this contracted service at all,” which makes verifying the safety of the laundered linen difficult, McLay explains.

“Every healthcare facility has a responsibility for oversight of their contracted companies … in my experience, most healthcare organizations have absolutely no idea what the contracted companies are doing. They don’t know how they operate, they don’t have a copy of their policies and procedures, there are never any inspections. They just bring the linen in and they’re happy.”

If you decide to contract your linen cleaning to an outside source, review the facility and follow up on their procedures to make sure they are operating safely and as needed to get the linen clean.

Keep record of contractors procedures

McLay advises that hospitals send their infection prevention team to the selected launderer annually to inspect the facility, as well as “inspect the transportation vehicles and follow the laundry all the way through the cycle from being picked up soiled, to returning back to the hospital clean.” (For more on linen handling, see p. 5, and work tool, insert.)

Request a copy of the launderer’s policies and procedures as well, to keep on file for your hospital’s reference, recommends McLay.

Joseph A. Gordon, MS, LFACHE, founder of Survey Resources LLC, in Manchester, N.J., and technical adviser to Environment of Care Leader, agrees. “Any kind of an arrangement between a hospital and a hospital laundry would be memorialized in some sort of contractual arrangement,” notes Gordon. Should your hospital encounter a linen-related infection control issue and a root cause analysis points to the launderer as part of the problem, (continued on p. 6)
Infection control

Follow these linen-handling measures to protect your hospital from RFIs

Ensuring that hospital staff handle linen safely requires some simple but important measures to be followed.

To prevent infection and possible RFIs — both of which can be costly — follow these tips on the safe transport and storage of hospital linen:

• Laundry that is transported to and from the hospital must be separated according to whether they are clean or soiled. “The clean laundry needs to be physically separated in some way,” explains Carol McLay, DrPH, RN, CIC, infection prevention consultant and chair of APIC’s Communications Committee. “You can use the same vehicle for clean and dirty, but there must be some type of physical separation.”

• As clean linen is returned to the hospital, ensure the linens are properly covered or sealed in plastic to prevent contamination during transport. Though this creates an additional step for staff, who must remove and properly dispose of or return the plastic lining, failure to protect the linen can endanger the cleanliness of the linen, which may pick up dust and debris en route to its destination. For example, certain carts may have shelves that are low to the ground, which potentially allows dust kicked up by staff and the wheels of the cart to contaminate the uncovered linen, says Joseph A. Gordon, MS, LFACHE, founder of Survey Resources LLC, in Manchester, N.J., and technical adviser to Environment of Care Leader. These shelves must have a solid bottom to further prevent contamination.

• Store linen within the hospital in a designated area until ready for use. “Ideally, certainly in the units, there needs to be a clean linen room,” says McLay. “Nothing else should be stored in that room except for clean linen.” This linen can rest on the carts used for transport, but should be covered to protect it from dust and dirt.

Ensure the shelves that linens are resting on are clear of dirt and debris and are at minimum 8 inches away from the floor, and 2 inches away from the walls, to allow easy cleaning access. Linen must be stored no closer than 18 inches from the ceiling to allow for proper ventilation and so as to not obstruct fire sprinklers and lighting, advises McLay.

• Ensure the door remains closed when not in use, and that the clean linen room has restricted access. “You don’t want your patients and family members going in and out of your linen [room],” McLay adds. — Steven Dashiell (sdashiell@decisionhealth.com)

Slow moving but deadly infection at New Orleans hospital linked to linens

New Orleans Children’s Hospital recently opened up about a deadly infection that claimed the lives of five children who were being treated at the hospital in 2008 and 2009.

In a recent article detailing the infectious outbreak in the New York Times, which cited both the CDC and the Pediatric Infectious Disease Journal, it was revealed that hospital ultimately traced the source of the infection to hospital linen.

According to the article, court documents in the case show that poor handling of the linen by hospital staff contributed to the contamination, including:

• Washcloths intended for patient use being used to clean bathrooms.
• And storing linen in the hallway without a protective cover.

New Orleans Children’s Hospital has since acknowledged their failures and has taken steps to correct these missteps and ensure that linen is handled and stored properly, including sterilization of the linen storage areas, changing where linen are received when transported to the hospital, and wrapping the linen for transport, notes NYT.

Resources:

• New York Times, “A Deadly Fungus and Questions at a Hospital”: http://tinyurl.com/NYT-infection
• Pediatric Infectious Disease Journal, “Mucormycosis Outbreak Associated with Hospital Linens:” http://tinyurl.com/IC-hospital-linens
you don't want to look to the arrangement and find that safeguards were not built in, says Gordon.

Though complete sterilization of hospital linen may seem like the safest way of ensuring linens are fit for reuse, this slash-and-burn approach can prove costly.

“For the most part, it is not a process that we follow,” says McLay. “It’s not unreasonable though, absolutely not. There is an additional cost to it — however, the cost in terms of lives and basic suffering from the patients is also valuable as well.”

Review the type of patients you are caring for and whether sterilizing linen will meet their needs. “Hospitals have to look at it by a cost-by-cost basis,” advises McLay.

Steven Dashiell (sdashiell@decisionhealth.com)

fire safety

(continued from p. 1)
design of fire protection features. That is up from 46% the year before, moving it into place as the third most-often scored standard overall.

Of 10 elements of performance (EPs), problems are sometimes found under EPs 5-7, which deal with fire doors. (For more see, p. 7.) But the main culprit under LS.02.01.10 is EP 9, which is related to fire barriers, says Robert Solomon, division manager for the National Fire Protection Association’s Building Fire Protection and Life Safety Department.

“It’s the things that happen above the ceiling and in the guts of the building,” Solomon says. “It’s the out-of-sight, out-of-mind things that make a difference.”

Fire barrier problems result in the vast majority of the citations, Solomon notes. Something as small as a single hole drilled in a wall designed to protect against fire damage can lead to a finding.

Make contractors aware of fire barriers before any maintenance or construction work begins, and designate a knowledgeable facilities staffers (or a group of staffs) to oversee the work. Though the nature and frequency of the staff oversight may change based on circumstances, such as the complexity of a project or the expertise of the contractors, check in regularly — even daily — as the work unfolds. Closely monitor sensitive jobs, including those that directly involve fire barriers.

Hospital requires internal work permits

Engineers and environment of care leaders at Children’s Hospital Colorado in Aurora, Colo., went a step further during the construction of a new 10-story, $230 million patient tower. CHC leaders instituted an internally administered permitting and education system for all contractors working on the project.

The web-based system is overseen by the hospital’s two safety officers, who issue permits, coordinate training as necessary and schedule meetings to discuss potential challenges around construction or fire safety issues, which are especially complex in a health care setting, says Jim Feist, CHC senior manager of EOC compliance and sustainability.

“It is an internal web-permitting system,” Feist says. “We ask them if they are going to be creating any penetration of the fire barriers, and if so, we ask them to get permitting. If there is a new contractor who is not familiar with the Life Safety Code, we do training with them.”

Consider hiring consultants

Hospital leaders also retained a consultant, Hughes Associates Inc., based in Baltimore, to provide fire protection services and then commission or verify that the work was done correctly before and during the construction of the tower, which opened in 2012.

Colorado Hospital officials declined to detail the exact cost of the services, though they acknowledged such services are “not free.” Even so, consider investing in consulting services during major construction or renovation not only for the peace of mind it provides, but for the topical expertise it offers to internal employees.

“The consultants have that knowledge that you need, because it’s 100% of their job,” says Scot Garcia, CHC’s senior manager of facilities operations. “But our technicians worked side by side with them and got a big understanding of the building and its operations and that knowledge is invaluable. A lot of education takes place there.”

For small as well as larger projects, regularly schedule meetings (either with contractors or with internal staff, as desires and circumstances dictate) to talk about problems before they arise.

“We had a daily conference call during the project,” says Kathy Hurley, CHC’s director of operations. “So issues were discovered before anything went too far down the line.”
Follow these tips

Other advice from Solomon and the Colorado safety officials include:

- **Consider attending a Barrier Management Symposium session.** The symposium was created by The Joint Commission, the Firestop Contractors International Association and other groups, and are to be scheduled around the country. The one-day program offers education on LSC and fire safety engineering principles. Currently scheduled sessions are full, but more dates in 2014 and 2015 are in the works.

- **Keep track of documents.** Set up a specific checklist of construction- and fire safety-related documents — such as blueprints or documents verifying that systems were installed correctly — that contractors must turn over.

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**Life safety**

**Roll back roller latches, despite potential Life Safety Code update**

Phase out roller latches on doors, even though the newest NFPA 101 Life Safety Code allows them under certain conditions.

In hospitals surveyed in 2013, almost half of them were scored under Joint Commission Life Safety standard **LS.02.01.10**, which requires building features to be designed and maintained to provide fire protection, according to data from The Joint Commission.

Two of the most common violations within the standard stem from problems found under Elements of Performance (EPs) 5-7, which cover door issues and latching assemblies.

The 2012 Life Safety Code, which CMS recently proposed adopting (ECL 4/28/14), allows roller latches in existing hospitals, but will not allow them in any new construction projects, says Robert Solomon, division manager for the Building Fire Protection and Life Safety Department of the National Fire Protection Association (NFPA).

However, CMS has prohibited the roller latches under all conditions, and said in its proposed rule that it would continue to do so even if it does approve adoption of the 2012 LSC. CMS “will prohibit their use in all Medicare and applicable Medicaid facilities,” Solomon says.

“Since this prohibition from CMS has been in place for so long as part of the Conditions of Participation, it is hard to imagine that a significant number of facilities would still be in violation.”

Roller latches are considered risky because heat build-up in a corridor can force a roller-latched door open, allowing smoke into the room.

As such, roller latches are likely to attract attention from surveyors from all accrediting bodies, Solomon says.

These latches are used in only a small percentage of hospitals, Solomon notes, and should be phased out in the remaining facilities that use them.

Avoid general Life Safety Code violations related to doors by paying closer overall attention to doors, especially those in heavier use.

“Doors are getting banged with carts, stretchers, gurneys and other stuff. It’s a matter of having a more aggressive surveillance program,” Solomon says. “The more it’s used, the more likely you are to have to check them more often.” — Scott Harris (scottharriswriter@gmail.com)

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**PAS2014**
to hospital officials, and determine a timetable for when each document is due, Garcia says.

- **Inform your staff.** Educate employees early in the life cycle of a project about fire safety components, especially in the case of new or renovated spaces. “They have to know from the get-go where the sprinkler lines are, and how different things are handled,” Feist says.

**Note:** Don’t forget to secure buy-in on the use of consultants from the C-suite, Hurley says. — Scott Harris (scottharriswriter@gmail.com)

**Resources:**
- Barrier Management Symposium: www.fcia.org/barriermanagementsymposium.htm

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**Emergency planning**

**TJC, CDC: Prepare now to deal with possible MERS-CoV outbreak**

The Joint Commission is giving a heads up to hospitals that the CDC wants health care organizations to prepare for dealing with a possible emerging infectious disease threat, the Middle East Respiratory Syndrome Coronavirus (MERS-CoV).

Among other links the commission is recommending is the CDC’s “Healthcare Facility Preparedness Checklist for MERS-CoV.” Among the array of action items on the checklist, those that pertain to the Environment of Care include:

- Review procedures for rapidly implementing appropriate isolation and infection practices for potential MERS-CoV patients.
- Review plans for implementation of surge capacity procedures and crisis standards of care.
- Develop plans for visitor restriction if MERS-CoV is circulating in the community.
- Confirm the local or state health department contact for reporting MERS-CoV cases and confirm reporting requirements.

- Ensure that negative-pressure airborne infection isolation rooms are functioning correctly and are appropriately monitored for airflow and exhaust handling.
- Assess availability of personal protective equipment (PPE) and other infection control supplies (e.g., hand hygiene supplies) that would be used for both healthcare personnel (HCP) protection and source control for infected patients (e.g., facemask on the patient).
- Have contingency plans if the demand for PPE or other supplies exceeds supply.
- Assess effectiveness of environmental cleaning procedures; provide education/refresher training for cleaning staff (http://www.cdc.gov/HAI/toolkits/Evaluating-Environmental-Cleaning.html).


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Work tool

Guidelines from CDC, HICPAC offer best practices for handling laundry and bedding

These best practices for handling laundry and bedding are taken from the “Guidelines for Environmental Infection Control in Health-Care Facilities” recommendations published by the CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). The full document can be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm.

(The recommendations are rated according to the following categories:

- **Category IA.** Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.

- **Category IB.** Strongly recommended for implementation and supported by certain experimental, clinical, or epidemiologic studies and a strong theoretic rationale.

- **Category IC.** Required by state or federal regulation, or representing an established association standard. (Note: Abbreviations for governing agencies and regulatory citations are listed where appropriate. Recommendations from regulations adopted at state levels are also noted. Recommendations from AIA guidelines cite the appropriate sections of the standards.)

- **Category II.** Suggested for implementation and supported by suggestive clinical or epidemiologic studies, or a theoretic rationale.

- **Unresolved issue.** No recommendation is offered. No consensus or insufficient evidence exists regarding efficacy.)

Recommendations — Laundry and Bedding

I. Employer Responsibilities

A. Employers must launder workers’ personal protective garments or uniforms that are contaminated with blood or other potentially infectious materials (293). Category IC (OSHA: 29 CFR 1910.1030 § d.3.iv)

B. Ensure that laundry areas have handwashing facilities and products and appropriate PPE available for workers (1,293). Category IC (AIA: 7.23.D4; OSHA: 29 CFR 1910.1030 § d.2.iii)

C. Use and maintain laundry equipment according to manufacturers’ instructions (353,354). Category II

D. Do not leave damp textiles or fabrics in machines overnight (353). Category II

E. Disinfection of washing and drying machines in residential care is not needed as long as gross soil is removed from items before washing and proper washing and drying procedures are used. Category II

III. Routine Handling of Contaminated Laundry

A. Handle contaminated textiles and fabrics with minimum agitation to avoid contamination of air, surfaces, and persons (36,293,355,356). Category IC (OSHA: 29 CFR 1910.1030 § d.4.iv)

B. Bag or otherwise contain contaminated textiles and fabrics at the point of use (293). Category IC (OSHA: 29 CFR 1910.1030 § d.4.iv)

1. Do not sort or prerinse contaminated textiles or fabrics in patient-care areas (293). Category IC (OSHA: 29 CFR 1910.1030 § d.4.iv)

2. Use leak-resistant containment for textiles and fabrics contaminated with blood or body substances (293,355). Category IC (OSHA: 29 CFR 1910.1030 § d.4.iv)

3. Identify bags or containers for contaminated textiles with labels, color coding, or other alternative means of communication as appropriate (293). Category IC (OSHA: 29 CFR 1910.1030 § d.4.iv)

C. Covers are not needed on contaminated textile hampers in patient-care areas. Category II

D. If laundry chutes are used, ensure that they are properly designed, maintained, and used in a manner

1. Ensure that laundry bags are closed before tossing the filled bag into the chute. Category II
2. Do not place loose items in the laundry chute. Category II
3. Establish a facility policy to determine when textiles or fabrics should be sorted in the laundry facility (i.e., before or after washing) (362,363). Category II

IV. Laundry Process

A. If hot-water laundry cycles are used, wash with detergent in water ≥160°F (≥71°C) for ≥25 minutes (1,270). Category IC (AIA: 7.31.E3)

B. No recommendation is offered regarding a hot-water temperature setting and cycle duration for items laundered in residence-style health-care facilities. Unresolved issue

C. Follow fabric-care instructions and special laundering requirements for items used in the facility (364). Category II

D. Choose chemicals suitable for low-temperature washing at proper use concentration if low-temperature (<160°F [<70°C]) laundry cycles are used (365–370). Category II

E. Package, transport, and store clean textiles and fabrics by methods that will ensure their cleanliness and protect them from dust and soil during interfacility loading, transport, and unloading (270). Category II

V. Microbiologic Sampling of Textiles

A. Do not conduct routine microbiologic sampling of clean textiles (270,371). Category IB

B. Use microbiologic sampling during outbreak investigations if epidemiologic evidence indicates a role for health-care textiles and clothing in disease transmission (371). Category IB

VI. Special Laundry Situations

A. Use sterilized textiles, surgical drapes, and gowns for situations requiring sterility in patient care (114). Category IB

B. Use hygienically clean textiles (i.e., laundered, but not sterilized) in neonatal intensive care units (292,372). Category IB

C. Follow manufacturers’ recommendations for cleaning fabric products, including those with coated or laminated surfaces. Category II

D. Do not use dry cleaning for routine laundering in health-care facilities (373–375). Category II

E. Use caution when considering use of antimicrobial mattresses, textiles, and clothing as replacements for standard bedding and other fabric items; EPA has not approved public health claims asserting protection against human pathogens for such treated items (376). Category II

F. No recommendation is offered regarding using disposable fabrics and textiles versus durable goods. Unresolved issue

VII. Mattresses and Pillows

A. Keep mattresses dry; discard them if they remain wet or stained, particularly in burn units (377–382). Category IB

B. Clean and disinfect mattress covers by using EPA-registered disinfectants that are compatible with the materials to prevent the development of tears, cracks, or holes in the covers (377–382). Category IB

C. Maintain the integrity of mattress and pillow covers. Category II

1. Replace mattress and pillow covers if they become torn or otherwise in need of repair. Category II

2. Do not stick needles into a mattress through the cover. Category II

D. Clean and disinfect moisture-resistant mattress covers between patient use by using an EPA-registered product (377–382). Category IB

E. If using a mattress cover completely made of fabric, change these covers and launder between patient use (377–382). Category IB

F. Launder pillow covers and washable pillows in the hot-water cycle between patients or when they become contaminated with body substances (382). Category IB

VIII. Air-Fluidized Beds

A. Follow manufacturers’ instructions for air-fluidized bed maintenance and decontamination. Category II

B. Change the polyester filter sheet at least weekly or as indicated by the manufacturer (383–386). Category II

C. Clean and disinfect the polyester filter sheet thoroughly, especially between patients, using an EPA-registered product (383–386). Category IB

D. Consult the facility engineer to determine the proper placement of air-fluidized beds in negative-pressure rooms (387). Category II