According to the U.S. Renal Data System’s 2007 Annual Data Report, infections are the second leading cause of death (15%) among hemodialysis patients. Hemodialysis patients are at high risk for infection due to their suppressed immune system, frequency of hospitalization, drug resistant organisms, and repeated exposure to the dialysis process and environment. The key in protecting the dialysis patient is to prevent the transmission and the infection.

The Guidelines for Environmental Infection Control in Healthcare Facilities, published by the Centers for Disease Control and Prevention’s (CDC) Health Care Infection Control Practices Advisory Committee (HICPAC), recognizes that infection control strategies and engineering controls are effective in preventing opportunistic, environment-related infections in immunocompromised populations. But, in healthcare, the environment of dialysis presents its own unique challenges.

The hemodialysis setting presents environmental challenges due to a variety of possible sources of contamination: water, dialysate, frequently-touched surfaces, intrinsically contaminated products (e.g., antimicrobial soaps, saline, antiseptic wipes, etc.) and extrinsically contaminated products (e.g., multidose vials, refillable soaps, flushes, etc.). Adding to those challenges is the unique spatial cohort of patients and the temporal demands of multiple shifts that encourage and support deviation from infection control strategies. Knowledge, education, and compliance with established policy and practice is crucial in dealing with the environmental aspects of infection control.

Water and Dialysate:
High-Risk Components

Water and dialysate represents the highest environmental exposure for the hemodialysis patient. The method of exposure is via the non-selective permeable membrane of the dialyzer, at an exposure rate in volumes of approximately $\geq 360$ liters per week. Microbial quality can have an impact on chronic inflammatory response syndrome (am-
Welcome to the second edition of “Preventing Infection in Ambulatory Care,” an APIC publication aimed at recognizing the increasing trend toward the use of ambulatory care settings and the need for infection prevention and control expertise. As with the first edition of this publication, APIC brings its members informative, educational and up-to-date articles on topics of importance in the ambulatory care setting.

“The Environmental Aspects of Infection Control in the Clinic,” written by Danilo Concepcion, operations manager for St. Joseph Hospital Renal Center in Orange, CA, is an insightful look into the field of hemodialysis, where infections are the second leading cause of deaths (15%) among patients, due to suppressed immune systems and drug-resistant organisms, among other things.

Concepcion’s article points out that while the Centers for Disease Control and Prevention’s Guidelines for Environmental Infection Control in Health Care Facilities recognizes that infection control strategies and engineering controls are effective in preventing opportunistic, environmentally-related infections in immunocompromised populations, the environment of dialysis presents its own unique challenges.

Infection preventionists Gwenda Felizardo of Group Health Cooperative in Seattle, WA, and Marcia Patrick of MultiCare Health System, Tacoma, WA, in their article “Ambulatory Surgical Centers: What the Infection Preventionist Needs to Know,” discuss the recent news-making patient safety breaches in surgical services practices and the hepatitis outbreaks that have resulted from those breaches. Their comprehensive look at patient safety and the five key areas that provide a continuum of care in both hospital and ambulatory surgery centers is a must for the infection preventionist in the ambulatory care setting.

An important follow-up to the Felizardo/Patrick article are two updates provided by Liz Garman, APIC’s director of Communications, who briefs readers on the One and Only Needle Safety Campaign that has been launched, and the APIC Consumer Advice: Reduce Infection Risk During Ambulatory Care Visits.

Once again APIC has provided its members with an updated table outlining the (present) 18 bills impacting ambulatory surgical centers.

We hope you’ll find these articles, along with those to come in upcoming issues of “Preventing Infection in Ambulatory Care,” both informative and enlightening. As always, we welcome your comments and encourage you to write to editor@apic.org, telling us what you want to read and need to know.

Regards,

Preventing Infection in Ambulatory Care Editors
should be designed to prevent bacterial proliferation, rather than being designed to eliminate bacteria once they have proliferated to an unacceptable level (i.e., above the action level).” *RD52: 2004, Section 4.1.2* recommends that “Product water used to prepare dialysate or concentrate from powder at a dialysis facility, or to process dialyzers for reuse, shall contain a viable microbial count lower than 200 CFU/ml and an endotoxin concentration lower than 2 EU/ml. The action level for the total viable microbial count in the product water shall be 50 CFU/ml, and the action level for the endotoxin concentration shall be 1 EU/ml.”

To validate the effectiveness of the disinfection program, microbial and endotoxin quality of water and dialysate should be monitored at least monthly. Particular attention should be given to the method of sampling and testing to minimize error in results. *RD52: 2004, Section 7.2* recommends methods for microbial monitoring methods, sample collection, heterotrophic plate count, and bacterial endotoxin testing. Competency of individuals responsible for the maintenance, operation, and quality control measures must be evaluated on a routine basis. Policies and procedures should be reviewed and updated to accommodate the dynamic environment of dialysis and to adjust to the revisions in standards, regulations, and practices.

The Importance of Hand Hygiene

The spatial challenge in an environment where patients are not segregated from other patients by the presence of walls creates problems in infection control. Hand washing must be performed prior to proceeding from patient to patient, machine to machine, or station to station. The proximity of each patient, the absence of a conscious reminder of a station boundary, (and) the lack of adequate and convenient hand washing sinks can lead to inadequate and improper hand hygiene. Waterless solutions, such as alcohol-based gels and liquids, can supplement and aid in providing greater resources for hand hygiene.

According to the CDC, “Easy access to hand hygiene supplies, whether sink, soap, medicated detergent, or alcohol-based hand-rub solution, is essential for optimal adherence to hand hygiene recommendations. The time required for nurses to leave a patient’s bedside, go to a sink, and wash and dry their hands before attending the next patient is a deterrent to frequent hand washing or hand antisepsis.” Placing the dispensers in multiple, convenient locations can aid and increase the dialysis practitioner’s ability to maintain hand hygiene.

Staff and patient education is critical to maintaining compliance with hand washing requirements. Routine surveillance and audit of hand washing practice should be performed to encourage and increase compliance with hand hygiene. Hand washing is the single most effective practice of reducing cross-contamination.

Being Diligent about Compliance

The reality of the temporal demands of a multishift schedule is that procedural prioritization occurs in order to keep pace with the schedule, maintain pace with your fellow caregiver, and to satisfy a waiting patient. Every dialysis practitioner strives to deliver safe and efficient dialysis, but no facility is immune to individuals de-
viating from established infection control strategies. Compliance with infection control can be complicated by conditions such as the shortage of nurses, assignment of a typically 1:4 staff-to-patient ratio for the dialysis technician, the fast turnaround time from patient seating to patient seating, the procedurally intensive process of priming, and put-on/take-off. In a typical hospital setting, terminal cleaning is performed by staff dedicated to the function of ensuring that the room is properly and completely disinfected from occupancy to occupancy. A typical dialysis unit has no such luxury. Instead, the nurse or dialysis technician must perform the housekeeping task of surface disinfection (machine, chair, chart, jugs, etc.) in the short gap between patient seating.

Borne out of the need to adjust to the spatial and temporal demands of dialysis, caregivers have invented or utilized infection control techniques that provide convenience and cost containment strategies. The use of items like the common supply cart, medication cart, or multidose medication vials has sometimes resulted in the breach in infection control. A common supply cart can be conducive to cross-contamination when used from station to station. The carts can allow the dialysis practitioner to conveniently access supplies during the dialysis process. Any intrusion into the cart without prior removal of glove and/or hand washing can potentially expose the content of the cart and subsequent patient to cross-contamination. “If a common supply cart is used to store clean supplies in the patient treatment area, this cart should remain in a designated area at a sufficient distance from patient stations to avoid contamination with blood. Such carts should not be moved between stations to distribute supplies.”

Contaminated medication vials can be a potential source of bacterial infection for the hemodialysis patient. An outbreak of Serratia liquefaciens bloodstream infections and pyrogenic reactions associated with extrinsically contaminated erythropoietin [Abstract]. Infect Control Hosp Epidemiol 21:136, 2000

Centers for Disease Control and Prevention. Recommendations for preventing transmission of infections among chronic hemodialysis patients. MMWR 50 (RR-5), 2001

Mr. Conception is also an NN&I Editorial Advisory Board member.

References


2. Centers for Disease Control and Prevention. Recommendations for preventing transmission of infections among chronic hemodialysis patients. MMWR 50 (RR-5), 2001

Conclusion

The spatial and temporal dynamic environment of dialysis presents a multitude of challenges. Consistently implemented infection control strategies, as recommended by AAMI, the CDC and other agencies, will prove effective in controlling environmentally-related infections in the immunocompromised dialysis population. The key to preventing infection is adherence to infection control strategies accomplished by education, knowledge, surveillance, and compliance.

References


2. Centers for Disease Control and Prevention. Recommendations for preventing transmission of infections among chronic hemodialysis patients. MMWR 50 (RR-5), 2001

Mr. Conception is also an NN&I Editorial Advisory Board member.
One and Only
Needle Safety Campaign Launched

By Liz Garman
APIC Communications Director

In February 2009, a year after health officials revealed what became the largest hepatitis outbreak investigation in U.S. healthcare history, a broad-based group of national healthcare leaders launched the “One and Only Campaign,” referencing the need to use one needle for every one patient in order to prevent future tragedies. APIC is providing education and training to this effort with HONOReform, a national coalition formed to bring a halt to unsafe injection practices in outpatient clinics nationwide. HONOReform was founded by Evelyn McKnight, AuD, a breast cancer survivor who received chemotherapy at an ambulatory care clinic and was subsequently infected with hepatitis C because the clinic reused syringes.

The newly-launched “One and Only Campaign,” with APIC as educational leader, will reach out to healthcare providers and patients about the fundamental evidence-based injection safety practices that ensure patient well-being. The campaign, which will be piloted in Nevada, includes a set of training materials designed to remind doctors, nurses, and other healthcare providers that syringes must be used one time only. An integral component of the campaign includes the production of a set of patient-focused materials designed to empower patients, adding yet another layer of protection in the fight to confine syringes to a single use.

The campaign’s launch follows a recent article, published in the January 6, 2009 edition of the Annals of Internal Medicine, which revealed the occurrence of 33 outbreaks of viral hepatitis in non-hospital healthcare settings over the last decade. All of these outbreaks involved failure on the part of healthcare providers to adhere to fundamental infection prevention practices, most notably by reusing syringes.

Visit www.oneandonlycampaign.org to learn more.

APIC’s Consumer Advice:
Reduce Infection Risk During Ambulatory Care Visits

As more healthcare is delivered outside the traditional four walls of the hospital, and reports circulate about unsafe infection control practices in ambulatory care clinics, APIC decided consumers needed additional information to help guide discussions with outpatient care providers. APIC filled this gap by publishing a timely set of tips that can be used by consumers and providers alike. “Reduce Your Risk of Infection Before an Ambulatory Procedure” provides concise information on what to ask about pre-surgical antibiotics, safe infection practices, surgical site preparation, maintaining normal body temperature, hand hygiene, use of protective apparel, glucose control and other factors relating to infection prevention.

“The most important point we wanted to convey was that each facility should have an infection preventionist either on staff or as a consultant to oversee their infection prevention program,” said Lynn Cromer, BSN, MT, CIC, chair of APIC’s Communications Committee, which developed the guide, and an infection control consultant with Duke University. “There is often less oversight in ambulatory care clinics as opposed to hospitals, which are more highly regulated. Consumers should be empowered to ask if there is an infection prevention program and a staff person or consultant dedicated to this function.”

Another critical component stressed in APIC’s new consumer tip sheet is the need for policies and procedures on cleaning and sterilization of instruments and equipment. “Again, the facility must have the expertise of an infection preventionist who is properly trained to monitor these processes,” said Cromer. “This is a complex area involving numerous technical details – even the tiniest error could result in the transmission of infection. We hope this guide will help patients and caregivers ask important questions and make informed choices prior to receiving care in an outpatient clinic.”

The material is available free on APIC’s consumer-oriented website: www.preventinfection.org.
Pending Ambulatory Surgical Centers’ Legislation For 2009

APIC has provided its members with a table outlining the (present) eighteen bills effecting ambulatory surgical centers (ASC) among the 49 states currently in legislative session. A review of the definitions in both Bill text and State Statutes that legislation would amend was conducted by APIC, in order to determine which states have legislation impacting ASC.

<table>
<thead>
<tr>
<th>STATE</th>
<th>Description</th>
<th>ASC required to report HAIs</th>
<th>Bill text and/or related statute</th>
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<tbody>
<tr>
<td>Colorado</td>
<td>Exempts ambulatory surgical centers and certified dialysis treatment centers from the requirement that the person collecting data on HAI rates be nationally certified in infection control.</td>
<td>No</td>
<td>Bill Text: <a href="http://www.leg.state.co.us/Clics/CLICS2009A/csl.nsf/fsbillcont3/F2D0E32E8DAB48A687257537001BB485?Open&amp;file=1025_01.pdf">http://www.leg.state.co.us/Clics/CLICS2009A/csl.nsf/fsbillcont3/F2D0E32E8DAB48A687257537001BB485?Open&amp;file=1025_01.pdf</a></td>
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<td>Hawaii</td>
<td>Requires hospitals and medical facilities to report HAI incidences and hand hygiene compliance rates to health department, which would calculate HAI rates for SSI, VAP, CLABSI, CAUTI, MRSA, VRE, acinetobacter baumannii and other categories as determined by the health department. Reports will be available to the public. Would also require hospitals to implement HAI prevention programs, first in ICU, surgical and other high risk units and later expand to other units. The definition for medical facilities includes ambulatory surgical centers.</td>
<td>Yes</td>
<td>Statute: Hawaii Revised Statute Definition: Section 321-11(10) <a href="http://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/HRS0321/HRS_0321-0011.htm">http://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/HRS0321/HRS_0321-0011.htm</a> Bill Text: <a href="http://www.capitol.hawaii.gov/session2009/bills/HB1261_.pdf">http://www.capitol.hawaii.gov/session2009/bills/HB1261_.pdf</a></td>
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<td>SB 170  (Introduced 1/28/09)</td>
<td>Requires healthcare professionals and laboratories to report MRSA incidence, and established guidelines for educating and monitoring people infected with MRSA. This bill includes all providers having a client affected by, or suspected of being affected by, a disease, staphylococcus aureus bacteria, or a condition declared to be communicable or dangerous to the public health.</td>
<td>Yes</td>
<td><a href="http://www.capitol.hawaii.gov/session2009/bills/SB170_.pdf">Bill Text:</a></td>
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<tr>
<td>Kentucky</td>
<td>HB 67  (Prefiled 12/3/08)</td>
<td>Requires that all healthcare facilities (including hospitals, rehabilitation or surgical centers, nursing facilities, and ambulatory surgical centers and healthcare facilities) implement an infection prevention program at least in ICUs, surgical units and other high-risk areas. Program would be expanded to include entire facility by 1/1/2010. Facilities’ HAI and MDRO infection rates would be reported to the Cabinet for Health and Family Services, which would provide an annual report to the legislature and governor and make that report available to the public.</td>
<td>Yes</td>
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<td>Maryland</td>
<td>SB 504  (Introduced 2/4/09)</td>
<td>Requires nursing homes, assisted living facilities and outpatient clinics in Baltimore City to report to the health commissioner all incidents of MRSA, as well as strategies being used to reduce or eliminate future incidents. *Note bill text and statute definitions are unclear if it relates to ambulatory surgical centers.</td>
<td>Yes</td>
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<td>SB 749  (Introduced 2/6/09)</td>
<td>Requires that death certificates include whether the deceased was being treated for a staphylococcus infection at the time of death. Also requires hospitals and nursing facilities to report annually on incidence of MRSA and VRE. *Note bill text and statute definitions are unclear if it relates to ambulatory surgical centers.</td>
<td>Yes</td>
<td><a href="http://mlis.state.md.us/asp/web_statutes.asp?ghg&amp;19-308.3">Statute: Maryland Statute</a>  &lt;br&gt; <a href="http://mlis.state.md.us/asp/web_statutes.asp?ghg&amp;19-301">Definition: Article Health General Sec. 19-301</a>  &lt;br&gt; <a href="http://mlis.state.md.us/2009rs/bills/sb/sb0749f.pdf">Bill Text:</a></td>
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<td>Maryland, continued</td>
<td><strong>SB 750</strong> <em>(Introduced 2/6/09)</em> Requires hospitals and nursing facilities to establish HAI prevention and control programs based on SHEA guidelines. Requires hospitals and nursing facilities to report annually on incidents of MRSA and VRE. <em>Note bill text and statute definitions are unclear if it relates to ambulatory surgical centers.</em></td>
<td>Yes</td>
<td>Bill Text: <a href="http://mlis.state.md.us/2009rs/bills/sb/sb0750f.pdf">http://mlis.state.md.us/2009rs/bills/sb/sb0750f.pdf</a></td>
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| Missouri      | **HB 286** *(Introduced 1/15/09)* Amends current law to note that VAP would only be included in quarterly infection incidence rate reports provided that other quality indicators designed to better measure the risk of acquiring VAP can be substituted for a risk-adjusted nosocomial infection incidence rate. Also, adds new section to current reporting law requiring every hospital, ambulatory and healthcare facility to establish a MRSA control program. | No                         | Statute: Missouri Revised Statute Chapter 197 [http://www.moga.mo.gov/STATUTES/STATUTES.HTM#T12](http://www.moga.mo.gov/STATUTES/STATUTES.HTM#T12)  
Definition: Sec. 197.305 [http://www.moga.mo.gov/statutes/C100-199/197000305.HTM](http://www.moga.mo.gov/statutes/C100-199/197000305.HTM)  
| New Jersey    | **A 1860** *(Introduced 1/24/08)* Implement infection control practices according to SHEA guidelines to reduce HAIs for healthcare facilities (related to S 469). The definition for healthcare facilities includes ambulatory surgical centers. | Yes                        | Statute: New Jersey Permanent Statute  
Definition: Title 26:2H-2 [http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&expandheadings=on&headingswithhits=on&hitsecond=on&infobase=statutes.nfo&record={A29B}&softpage=Doc_Frame_PG42](http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&expandheadings=on&headingswithhits=on&hitsecond=on&infobase=statutes.nfo&record={A29B}&softpage=Doc_Frame_PG42)  
|               | **A 1899** *(Introduced 1/28/08)* Requires that all healthcare providers and healthcare facilities get patient consent for use of reprocessed or recycled medical devices (Identical to S 892). The definition for healthcare facilities includes ambulatory surgical centers. | No                         | Statute: New Jersey Permanent Statute  
Definition: Title 26:2H-2 [http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&expandheadings=on&headingswithhits=on&hitsecond=on&infobase=statutes.nfo&record={A29B}&softpage=Doc_Frame_PG42](http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&expandheadings=on&headingswithhits=on&hitsecond=on&infobase=statutes.nfo&record={A29B}&softpage=Doc_Frame_PG42)  
Bill Text: [http://www.njleg.state.nj.us/2008/Bills/A2000/1899_I1.PDF](http://www.njleg.state.nj.us/2008/Bills/A2000/1899_I1.PDF) |
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<td><strong>New Jersey, continued</strong></td>
<td>A 2658 (Introduced 5/12/08)</td>
<td>Yes</td>
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Statute: New Jersey Permanent Statute  
Bill Text:  
[http://www.njleg.state.nj.us/2008/Bills/A3000/2658_I1.PDF](http://www.njleg.state.nj.us/2008/Bills/A3000/2658_I1.PDF)  
* A2658 would supplement Title 26 of the New Jersey Permanent Statute |
| | Extend to nursing homes and ambulatory surgical centers provisions of current law requiring hospitals to establish MRSA control programs and HAI reporting. | | |
| **S 469 (Introduced 1/8/08)** | | Yes |  
Statute: New Jersey Permanent Statute  
Definition: Title 26:2H-2  
[http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&depth=2&expandheadings=on&headingswithhits=on&hitsonheadings=on&infobase=statutes.info&record={A29B}&softpage=Doc_Frame_PG42](http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&depth=2&expandheadings=on&headingswithhits=on&hitsonheadings=on&infobase=statutes.info&record={A29B}&softpage=Doc_Frame_PG42)  
Bill Text:  
[http://www.njleg.state.nj.us/2008/Bills/S0500/469_I1.PDF](http://www.njleg.state.nj.us/2008/Bills/S0500/469_I1.PDF) |
| | Implements infection control practices according to SHEA guidelines to reduce HAIs for healthcare facilities (related to HB 1860). The definition for healthcare facilities includes ambulatory surgical centers. | | |
| **S 892 (Introduced 1/28/08)** | | No |  
Statute: New Jersey Permanent Statute  
Definition: Title 26:2H-2  
[http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&depth=2&expandheadings=on&headingswithhits=on&hitsonheadings=on&infobase=statutes.info&record={A29B}&softpage=Doc_Frame_PG42](http://lis.njleg.state.nj.us/cgi-bin/om_isapi.dll?clientID=105480826&Depth=2&depth=2&expandheadings=on&headingswithhits=on&hitsonheadings=on&infobase=statutes.info&record={A29B}&softpage=Doc_Frame_PG42)  
Bill Text:  
[http://www.njleg.state.nj.us/2008/Bills/S1000/892_I1.PDF](http://www.njleg.state.nj.us/2008/Bills/S1000/892_I1.PDF) |
| | Requires that all healthcare providers and healthcare facilities get patient consent for use of reprocessed or recycled medical devices (Identical to A 1899). The definition for healthcare facilities includes ambulatory surgical centers. | | |
Definitions: Article 28, 2801  
Bill Text:  
[http://assembly.state.ny.us/leg/?bn=A00294&sh=t](http://assembly.state.ny.us/leg/?bn=A00294&sh=t) |
| | Requires hospitals and residential healthcare facilities to develop in-house training programs for sterile processing professionals. The definition for residential healthcare facilities includes ambulatory surgical centers. | | |
| **Texas** | SB494 (Introduced 1/15/09) | No | Statute: Texas Statute  
Definition: Health and Safety Code, Chp. 98 Sec 98.001  
Bill Text:  
| | Appropriates $1.5 million in FY 2010 and $2.8 million in FY 2011 to implement healthcare facilities HAI reporting law that was enacted in 2007. The definition for healthcare facilities includes ambulatory surgical centers. | | |
| SB1386 (Introduced 2/18/09) | Amends current state HAI reporting law to require each healthcare facility to report the incidence of HAIs occurring at the facility. Included in reporting requirements would be which infections resulted in the death of a patient. The definition for healthcare facilities to include ambulatory surgical centers. | Yes | Statute: Texas Statute  
Definition: Health and Safety Code, Chp. 98 Sec 98.001  
Bill Text:  
[http://www.statutes.legis.state.tx.us/SOTWDocs/HS/htm/HS.98.htm#98.001](http://www.statutes.legis.state.tx.us/SOTWDocs/HS/htm/HS.98.htm#98.001)  
Bill Text:  
The recent news-making patient safety breaches in surgical services practices throughout the nation, resulting in hepatitis outbreaks, are certainly cause for alarm. Many leading infection preventionists believe that if basic infection prevention practices had been in use, these outbreaks would not have occurred.

Yet to be determined is the rationale behind the reuse of syringes and of vials used to pool a lipid-based medication that is easily contaminated. However, pressure on the healthcare industry to contain costs and increase productivity while still maintaining a profit raises the questions as to whether basic infection prevention finds itself at the bottom of the priority ladder in these instances. Although aseptic technique is required in surgical areas, there may be a misperception by infection preventionists that surgical staff understands infection prevention concepts and the application of cross-contamination prevention.

We assume they understand how microorganisms get transmitted and that they know how to prevent that transmission. However, it is important to keep in mind that in many states, free-standing, ambulatory surgery centers have no regulatory oversight to ensure patient safety, and in states with regulatory agencies, the surveyors may not have the level of knowledge required to evaluate these complex, technical processes. In this article we will examine the obvious and more subtle aspects of cross-contamination in surgery centers and provide the reader with prevention standards.

Hospital and ambulatory surgery centers have five key areas that provide a continuum of care for the patient: admitting, pre-surgery, anesthesia, operating room, and post-operative care. Cross-contamination can occur at multiple points as the patient travels through these areas. Use of an assessment monitoring tool will aid the infection preventionist when performing a walk through and observations. This observation list focuses on practices around hand hygiene, contamination of medications and supplies, cross-contamination of injectables, topical medications, and medication administration practices, and will help infection preventionists and surgical personnel
to identify areas for improvement and ensure safe patient practices. Seven key areas of focus include:

**Hand hygiene:**
Performed at key times and with an acceptable, accessible product.
- Before putting on gloves
- Before medication set up and IV procedures
- Before and after touching patient
- Between dirty and clean steps in a procedure or process
- After intubation
- After removing gloves
- Before accessing and handling clean supplies and equipment
- After touching the floor or items on floor
- Before handling laryngoscopes, LMAs and patient masks
- Refer to the CDC Guideline for Hand Hygiene in Healthcare Settings, 2002

**Personal protective equipment:**
- Do not wear masks around the neck outside the OR suite. Remove and replace between cases
- Wear gowns and gloves for patients on Contact Precautions
- Change scrubs and cover coats daily, after contact with body substances, and when visibly soiled
- Wear cover coats properly, if used; do not tie around waist, etc.
- Cover hair in the OR and decontamination areas
- Use full barrier precautions, including a mask, during epidurals, angiograms, spinal anesthesia, and central line insertion

**Personal hygiene:**
- Ensure scrubs cover all personal clothing
- Wear minimal jewelry in PACU, pre-surgery, OR, anesthesia, and decontamination
- No artificial nails for the groups listed above
- Restrict from patient contact and patient environment those staff with the following symptoms: non-intact skin on hands or forearms, orofacial herpetic lesions, herpes on hands, conjunctivitis, fever, gastroenteritis (diarrhea, vomiting), respiratory infection with cough or uncontrolled secretions. Refer to the 1998 CDC Guidelines for Infection Control in Healthcare Personnel

**Cleaning the environment:**
- Clean and disinfect whatever is touched and used during patient care
- Perform environmental monitoring (using fluorescent marker product and UV light) as an educational tool to help staff improve OR turnaround cleaning
• Ensure that someone is responsible for monitoring that an OR suite has been properly cleaned before and between cases
• Change cleaning cloths frequently
• Wipe from cleanest surface to dirtiest. Example: a cart should be cleaned from top down. Legs of cart are the last to be cleaned. Change cloth before moving to another surface
• Ensure someone is responsible to clean anesthesia equipment, keyboards, mice and stools
• Disinfect the top of the anesthesia cart and change towel between cases
• Disinfect anesthesia equipment, cords, knobs, drawer handles and other high hand touch areas between cases

Supply handling and storage
• Use individual bottles of solutions such as normal saline, water, etc., and discard after the procedure
• Sanitize hands before accessing supplies in drawers or cabinets or opening packages
• Use only clean hands and/or clean gloves to access items inside the anesthesia cart
• Ensure that equipment, storage bins, totes and supplies are dust free
• Do not store supplies in cardboard packing boxes
• Check for expiration dates, especially dressings, suture materials, etc.

Anesthesia and OR practices
• Store personal items in locker or outside the OR. A less-desirable option is to store personal items in a container or bag that can be disinfected
• Change gloves and sanitize hands after contact with body substances, including after intubation and extubation
• Perform hand hygiene immediately prior to handling the laryngoscope, patient oxygen mask and Laryngeal Mask Airway (LMA)
• Wear gloves, mask and eye protection for airway intubation. Remove gloves and sanitize hands when tube is secure
• Prepare lengths of tape for securement of airway with clean hands; do not touch tape rolls with contaminated hands or gloves. If tape rolls are touched with contaminated hands, discard the roll
• Disinfect clipper handle and discard heads/blades between cases. Do not use razors
• Propofol and other meds in single use vials are single patient use. Discard any remaining drug after the procedure
• Replace multidose vials with single dose vials or manufacturer prepared syringes to decrease risk of cross contamination
• Always use a new, sterile needle and syringe to enter a multidose vial
• Prepare meds on a clean surface on the anesthesia medication cart and only for the current patient
• Never leave meds unattended, or the anesthesia cart unlocked
• Never administer a medication drawn or prepared by anyone other than yourself or the pharmacy
• All syringes must be labeled, including on the sterile field. Sterile labels must be used when drawing up on the sterile field. If the syringe is drawn up, then laid down on the field for even a moment before administration, it must be labeled
• All needles, syringes and IV tubing are single patient use. Use of manifolds is prohibited
• Store eye ointments and eye drops on a clean surface and dispense using clean hands and clean gloves, using “no touch” technique. If the tip of the eye dropper or ointment
• Tube comes in contact with the patient or another non-sterile surface, discard container
• Store lidocaine and lubricant tubes on a clean surface and disperse, using clean hands and clean gloves, into a clean medicine cup and place the tube back onto the clean surface to prevent contamination of the tube
• Disinfect vial tops and IV ports prior to access
• Keep IV tubing off the floor
• Spike IV bags within one hour of initiation of administration.
• Store medications and solutions in clean drawers and cabinets
• Ensure there is an effective system in place to remove expired meds and supplies
• Use a filtered needle to draw up solution from glass ampoules
• Between cases, discard solutions in individual containers, e.g., normal saline or water for irrigation, antiseptic solutions

Careful attention to surgery practices, whether in the hospital or ambulatory settings, will go a long way to ensuring the safety of our patients.

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