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Bug of the Month
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Hand hygiene/sterilization

Ready or not, here I come

MY FAVORITE GAME IS HIDE AND SEEK. While I can thrive in various environments, one of my favorite places is the hospital.

I think it is a great spot to build a home and family. There is a lot of room to grow. I have noticed that our community seems to thrive despite the efforts to keep us out of this environment. I don’t mind all the attention though, because I can survive for days, weeks, and even months, and in some cases, without much water. I can live on hard and soft surfaces, including hand rails, bed-side tables, bedding, plastics, clothes, counters, and even on people. I do prefer a moist environment though, and I love hot weather—95-degrees F is ideal.

I think that is why I like hospitals so much; there is so much opportunity and space. And there are so many ways to get around the facility.

I recently learned that I can live up to:

- seven months on dust
- eight weeks on a mop head
- nine weeks on a cotton towel
- 203 days on a blanket
- Indefinitely on skin

In a study (Neely, et al, J Clin Microbiol. 2000 Feb; 38(2): 724-726), the authors state that I can survive for days to months after drying on hospital fabrics and plastics.

So, you probably guessed that I am a species of bacteria, Gram-positive cocci. I am somewhat unique though. In fact, my ancestors were first discovered in 1961. What didn’t kill my ancestors back then, only made me stronger.

When I infect a person, it can manifest as swollen red bumps on the skin. Eventually, the infection progresses, filling with pus, and the patient can become feverish. It doesn’t take that long for this kind of infection to turn into an abscess that could require surgical drainage. In other cases, the abscess can be located deep in the body and result in infections in bones, joints, the blood stream, other wounds, heart valves, and even lungs.

In hospitals, there are three common risk factors for acquiring this kind of infection, including hospitalization (especially those people with weakened immune systems), medical tubing or other invasive devices, and living in a long-term care facility.

To prevent infections, the Institute for Healthcare Improvement (IHI) recommends effective hand hygiene, environmental and equipment decontamination, active surveillance, contact precautions for those patients infected by the bacteria, and strategies and best practices to prevent transmission through invasive devices like central venous catheter or ventilator.

Just remember that my power is magnified exponentially when I get into a host’s body. It is hard to stop me, and there are only a few ways to do it.

Who am I?

Source: National Institute of Allergy and Infectious Diseases

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Vascular Access

FDA: Healthcare Facilities Should Transition to Disposable Duodenoscopes

By Christine Blank

The Food and Drug Administration (FDA) is calling on healthcare facilities to start planning a switch from duodenoscopes with fixed endcaps to those with disposable components that include disposable endcaps—or to fully disposable duodenoscopes when they become available.

The move, FDA says, will improve patient safety due to “challenges with cleaning these devices for reuse (reprocessing) and persistent high levels of contamination,” the agency says in a statement. “Disposable designs simplify or eliminate the need for reprocessing, which may reduce between-patient duodenoscope contamination as compared to reusable, or fixed endcaps,” FDA says.

“We recognize that a full transition away from conventional duodenoscopes to innovative models will take time and immediate transition is not possible for all health care facilities due to cost and market availability,” says Jeff Shuren, MD, JD, director of the FDA’s Center for Devices and Radiological Health. “This is why we’re communicating with healthcare facilities now—so they can begin developing a transition plan to replace conventional duodenoscopes—and those facilities that are purchasing duodenoscopes with fixed endcaps can invest in the newer, innovative models.”

The FDA has cleared two duodenoscopes with disposable endcaps: Fujifilm Corp., model ED-S80XT and Pentax Medical, model ED34-i10T. Other firms have publicly announced plans to develop fully disposable duodenoscopes.

FDA is also encouraging manufacturers of fixed end duodenoscope models to assist healthcare facilities with their transition plans. “We continue to work with manufacturers to increase the supply of disposable cap duodenoscopes and the development of other new and innovative device designs that will further minimize or eliminate the risk of patient infection,” Shuren says.

“Duodenoscopes remain critical to life-saving care for many patients in the United States. While the risk of infection from inadequate reprocessing is relatively low, we are taking action because of continuing elevated levels of contamination in duodenoscopes,” he adds.

FDA is also ordering new postmarket surveillance studies on duodenoscopes with disposable endcaps, is requesting the inclusion of real-world contamination rates in duodenoscope labeling, and is issuing letters to manufacturers of certain test strips used to assess duodenoscope cleanliness that have not been through proper FDA premarket review.

“These actions...are part of our robust, ongoing effort to gather information on the effectiveness of duodenoscope reprocessing to prevent between-patient contamination,” Shuren says.

Duodenoscopes include reusable and hard-to-clean components and must be cleaned and sanitized to be re-used, known as reprocessing, after each patient through a lengthy procedure—one that currently consists of hundreds of steps, FDA explains. “Reprocessing of duodenoscopes involves cleaning outside surfaces, interior channels and the elevator recess to remove tissue and fluids, followed by treatment to kill microorganisms. After thorough cleaning, high-level disinfection is intended to reduce harmful microbes so that the device is reasonably assured to be free of the risk of disease transmission,” the agency said.

Failure to correctly reprocess a duodenoscope could result in tissue or fluid from one patient remaining in a duodenoscope and potential for disease transmission.

Postmarket surveillance human factors studies indicate that many steps in the reprocessing instructions cannot be reliably followed by healthcare facilities, FDA says.

FDA also ordered manufacturers of duodenoscopes with disposable endcaps to conduct postmarket surveillance studies to gather more information and verify that the new designs reduce contamination rates.

After the postmarket surveillance studies have been completed, the FDA expects the labeling on duodenoscopes with disposable endcaps to be updated with contamination rate data. “Including the contamination rate would allow patients and health care professionals to make informed decisions about the potential risks associated with the duodenoscope,” the agency says.

Until next month, bust those bugs!
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AH119-175
When it comes to treating contagious and easily transmissible diseases—particularly at pandemic levels—healthcare providers are the first line of defense. But are they ready?

As the flu season approaches, it is a good time to review infection control procedures within a healthcare organization, especially related to protocols, isolation, and personal protective equipment (PPE).

Federal guidelines exist, but how well healthcare providers understand and enact those guidelines is sometimes underestimated. “Any hospital or healthcare organization needs to make sure that what they are doing is completely consistent with the gold standards published by the Occupational Health and Safety Administration (OSHA) and the Centers for Disease Control and Prevention (CDC),” says Tener Goodwin Veenema, PhD, MPH, RN, FAAN, and international expert on disaster preparedness and containment of outbreaks and a professor at Johns Hopkins University. “The key is how do we make sure that we create an infection control program and have personal protection equipment (PPE) plan that is consistent with national guidelines and positions us to keep our patients, staff, and visitors safe.”

Having a basic and clear policy based on national standards is a good start, she says, but it’s not enough. Healthcare organizations need to make sure they are structured in a way that allows them to have real-time surveillance of disease activity and respond quickly when necessary.

“Healthcare organizations that are

The next challenge is making sure that staff are using PPE correctly.
forward-thinking to seasonal flu and pandemic levels must begin to think, do we have a robust infection
control program where there is adequate surveillance,
detection, and oversight of the implementation of
infection control standards and the use of PPE,” she explains.

David Avalos, MSN, RN, AOCNS, CIC, a member of the
Association for Professionals in Infection Control and
Epidemiology (APIC) and an infection preventionist
at CarolMont Regional Medical Center in Gastonia, NC,
says when considering infection control programs, it’s
also important to consider travel and not just focus
on what is going on in your area.

“We implemented a travel screen and posted
a map of global hot spots to identify patients who
may have traveled to countries with pandemic outbreaks,” Avalos says.

“We realized that not everyone was following the
same procedures, and there is a need to standardize the
process between inpatient, emergency department, urgent care, and community
practices.”

Having systems like these in place help administrators and front-line caregivers
make the best decisions on how to triage patients and
control spread of infection, Goodwin Veenema says.

When considering PPE programs in particular,
healthcare organizations must be sure to review their
policies and supply levels.

“For seasonal flu, we are concerned with airborne
transmission and droplets. We need respiratory
protection for all healthcare providers,” she says,
noting that healthcare facilities must recognize that
protection is needed for other staff who may come
in contact with patients, including security, house-
keeping, and nutrition services staff. “Is there enough
PPE to cover everyone who could potentially need it?
Keep in mind that the flu and certain epidemics and
pandemics would come in waves.”

This means that healthcare facilities have to be
prepared to have enough of the right types of PPE to
last for several weeks or even months, she says. The
next challenge, Goodwin Veenema says, is making
sure that staff are using PPE correctly.

“Donning and doffing is critically important,” she
says, adding that caregivers are often exposed from
self-contamination from improperly removing PPE.

Some big mistakes when it comes to PPE include
placing N95 respirators on patients instead of surgical
masks, reusing isolation gowns and not understanding
that they are one-time use items, Avalos explains. Don’t

assume caregivers know the policy or understand how
to use PPE, he adds.

“I had an issue with a physician using the same
gloves and disinfecting the gloves between use. Do not
assume they understand all the information provided.
We tend to provide a lot of information, but do not
assess their level of understanding,” he adds.

Education about PPE for support staff is just as
important as having adequate standards and supplies.
Healthcare facilities must stress the need for caregivers
to protect themselves at all times, but especially in
times of an outbreak.

“Remember to create a program where we are
really stressing personal preparedness and
personal safety,” Goodwin
Veenema says. “Encourage
all healthcare providers
and anyone who works
within the hospital to make
sure they have a flu shot
annually, and to remember
that the number one best
strategy for infection control
is adequate handwashing.”

When it comes to less
common or highly contagious
disease outbreaks, like Ebola
and measles, facilities have to
quickly move from standard infection control measures
to a higher level of protection.

“With Ebola and measles, we implement incident
command,” Avalos explains. “There is a 2:1 ratio—two
nurses to one patient—for Ebola patients. We stabilize
the patient and prepare him or her to transfer to a
treatment facility. With Ebola and measles, we limit
healthcare workers’ exposure by minimizing amount
of staff involved in patient care.”

Other policies that stress employee safety and
health are important, too, he says. Caregivers—partic-
ularly nurses—should know the differences between
seasonal and pandemic influenza, because they are
usually the first line of contact for patients. They
also need to be supported in maintaining their own
health and have the flexibility to stay home and care
for themselves when they become sick themselves,
she says.

“Talk with the nursing leadership and make sure
everyone understands the infection control program
and what their role is,” she says. “We as nurses are
all so committed to our patients and our families and
try to render high-quality care in any situation. But
should there be a pandemic influenza outbreak, all
healthcare systems would be challenged to the fullest
extent due to the volume of patients needing care.
Nurse safety and taking care of ourselves and our
colleagues is going to be critically important.”

One of those key components is daily surveillance with
situational awareness reports to all relevant healthcare and
administrative staff so that everyone is aware of where we
stand in terms of spread and outbreak.
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Routine annual tuberculosis testing may be on the way out, following a new recommendation published in the Center for Disease Control and Prevention’s Morbidity and Mortality Weekly Report.

The report, a culmination of extensive research, reveals that tuberculosis (TB) rates have become so rare among healthcare workers that it may not be worth the time and expense to conduct routine testing.

“We were doing, as a country, tens of millions of TB tests annually on a population that doesn’t have TB,” explains Wendy Thanassi, MD, MA, chief of occupational health at VA Palo Alto, associate professor at Stanford University, and co-author of the guidance.

Thanassi and several other authors who worked on the guidance presented their findings and answered questions about their research at the Association of Occupational Health Professionals (AOHP) National Conference Sept. 4-7 in Baltimore.

Routine TB testing stems from the century-old fear of the infection, yet successful public health programs have been highly effective at reducing the risk.

“Tuberculosis is still an incredibly dangerous infection. In the United States, it was the leading cause of death in 1915-16,” Thanassi says. “But in the last 100 years, there has been incredible progress in treatment and environmental controls.”

Nutrition and living conditions have improved to the point that the United States has one of the lowest rates of TB infection at about 2.8 cases per 100,000 individuals—lower in healthcare workers at approximately 2.5/100,000. This represents a 73 percent decrease in TB prevalence from 1991 to 2017, and a 42 percent drop from 2005 to 2017, according to the report.

With roughly 18 million healthcare workers in the United States, Thanassi says the healthcare cost has been huge, and it doesn’t even factor environmental costs related to unnecessary transportation of testing supplies and medical waste.

“When I look at the sweeping change this can make, we are saving tons of medical waste per year,” Thanassi says. “It all

### FIGURE 1: HCP TB-recommendations

<table>
<thead>
<tr>
<th></th>
<th>2005 Recommendations</th>
<th>2019 Recommendations Key Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>Recommended for all healthcare personnel pre-placement/upon hire*</td>
<td>Individual baseline TB risk assessment added</td>
</tr>
<tr>
<td></td>
<td>Annual Screening may be recommended based on risk assessment of health care facility and setting</td>
<td>Annual TB screening no longer routinely recommended for most healthcare personnel unless occupational risk or ongoing exposure</td>
</tr>
<tr>
<td>Post-exposure testing</td>
<td>Recommended IGRA or TST test for all healthcare personnel when an exposure is recognized *</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>If that test is negative, do another test 8-10 weeks after the last exposure*</td>
<td></td>
</tr>
<tr>
<td>Treatment of positive TB test</td>
<td>Referral to determine whether latent TB infection (LTBI) treatment is indicated</td>
<td>Treatment is encouraged for all healthcare personnel with untreated LTBI</td>
</tr>
<tr>
<td></td>
<td>Shorter course (3 to 4 month) encouraged over the longer (6 to 9 month) regimens because they are easier to complete</td>
<td></td>
</tr>
<tr>
<td>TB education</td>
<td>Recommended annually for all healthcare personnel*</td>
<td>Annual education should include information about TB risk actors, the signs and symptoms of TB disease, and TB infection control policies and procedures</td>
</tr>
</tbody>
</table>

*No change in the 2019 recommendations

Full recommendations available at cdc.gov/tb/topic/testing/healthcareworkers.htm

Source: Centers for Disease Control and Prevention
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came together to mean we have to stop doing these tests every year on healthcare workers. It doesn’t make sense to do tens of millions of tests looking at the population where TB isn’t.”

The research contained in the MMWR report was based initially on more than 1,800 studies conducted since the last guidance on TB testing in healthcare workers was drafted in 2005. The final report was focused on 36 of the most relevant studies, all of which pointed to the conclusion that routine TB testing of healthcare workers is no longer needed. In fact, data show that prevalence of TB among healthcare workers was so low, workers were more likely to have a false positive result than a true positive one, Thanassi says.

Extensive databases developed over the last decade enabled this level of research, Thanassi adds, and she estimates that 96.6 percent of annual TB tests on the VA’s own 400,000 healthcare workers are negative. The new recommendation means that public health efforts can now be turned to more at-risk populations.

“We want to divert the focus and spending to treating latent TB in the United States and focus our energies on those who still suffer from this disease,” Thanassi says.

Not all states or all healthcare facilities require annual TB screening for healthcare workers, and even some that do have considered discontinuing the practice, Thanassi says.

This report may give those states and institutions the data they need to support a policy change—although the decision to stop routine TB testing ultimately will be made at the individual healthcare facility level. California is one state that has debated abandoning routine TB testing for healthcare workers, considering the 1.4 million healthcare workers in the state, just 92 cases of TB were identified in 2016. The healthcare savings and positive environmental impact of such a change could be monumental, she says.

A companion report on risk assessments and facility-level recommendations that is forthcoming will be published in the Journal of Occupational Health and Environmental Medicine.

Thanassi was also clear that the recommendation in MMWR does not impact post-exposure TB testing for healthcare workers, a practice that she said should continue without question. Routine pre-employment testing of healthcare workers for TB, as well as testing and treatment of workers with TB, also should be continued, according to the report.  

---

### TB Infection Control Measures

#### Administrative Controls

The first and most important level of the hierarchy, administrative controls, are management measures that are intended to reduce the risk or exposure to persons with infectious TB. These control measures consist of the following activities:

- Assigning someone the responsibility for TB infection control in the healthcare setting;
- Conducting a TB risk assessment of the setting;
- Developing and implementing a written TB infection-control plan;
- Ensuring the availability of recommended laboratory processing, testing, and reporting of results;
- Implementing effective work practices for managing patients who may have TB disease;
- Ensuring proper cleaning, sterilization, or disinfection of equipment that might be contaminated (e.g., endoscopes);
- Educating, training, and counseling healthcare workers, patients, and visitors about TB infection and disease;
- Testing and evaluating workers who are at risk for exposure to TB disease;
- Applying epidemiology-based prevention principles, including the use of setting-related TB infection-control data;
- Using posters and signs to remind patients and staff of proper cough etiquette (covering mouth when coughing) and respiratory hygiene;
- Coordinating efforts between local or state health departments and high-risk health-care and congregate settings.

#### Environmental Controls

The second level of the hierarchy is the use of environmental controls to prevent the spread and reduce the concentration of infectious droplet nuclei. This includes two types of environmental control.

- Primary environmental controls consist of controlling the source of infection by using local exhaust ventilation (e.g., hoods, tents, or booths) and diluting and removing contaminated air by using general ventilation.
- Secondary environmental controls consist of controlling the airflow to prevent contamination of air in areas adjacent to the source airborne infection isolation (AI) rooms; and cleaning the air by using high efficiency particulate air (HEPA) filtration, or ultraviolet germicidal irradiation.

#### Respiratory Controls

The third level of the hierarchy is the use of respiratory-protection control. This consists of the use of personal protective equipment in situations that pose a high risk of exposure to TB disease.

Use of respiratory protection equipment can further reduce risk for exposure of healthcare workers to infectious droplet nuclei that have been expelled into the air from a patient with infectious TB disease. The following measures can be taken to reduce the risk for exposure:

- Implementing a respiratory protection program;
- Training healthcare workers on respiratory protection; and
- Educating patients on respiratory hygiene and the importance of cough etiquette procedures.

Source: Centers for Disease Control and Prevention
Antimicrobial Resistance

New Strategies to Fight

DISARM Act Proposes

Sterilization

Antimicrobial Resistance

By Joan Vos MacDonald

Antimicrobials are a lifesaver—except when they stop working—and, unfortunately, that is happening more often as multidrug resistant bacteria render many previously useful antimicrobials ineffective. The CDC estimates that about two million people in the United States get an antibiotic-resistant infection every year and the rise of such infections has prompted the World Health Organization to list antimicrobial resistance among the top 10 global health threats for 2019.

In response to this threat, Senators Johnny Isakson (R-GA) and Robert Casey (D-PA) co-sponsored the Developing an Innovative Strategy for Antimicrobial Resistant Microorganisms (DISARM) Act of 2019, which features a multifaceted strategy for developing new antibiotics and protecting the effectiveness of existing antibiotics. Infection control remains paramount to staving off this growing threat in hospitals and long-term care.

“The DISARM Act addresses two of the critical elements of a multicomponent strategy,” says James M. Hughes, MD, FIDSA, professor emeritus of medicine, Emory University School of Medicine, and a former president of the Infectious Diseases Society of America. “The legislation would help reinvigorate the antibiotic development pipeline for effective new antibiotics, by increasing hospital reimbursement, and incentivize development of robust effective antimicrobial stewardship programs which are needed to encourage judicious use of currently available antibiotics in order to conserve their effectiveness.

DISARM was designed to address what is probably the largest barrier to new antibiotic development—the lack of financial resources for pharmaceutical companies to develop new antibiotics. New versions have been slow to come to market as pharmaceutical companies no longer find it cost effective to research and develop them.

“One study by the Tufts Center for the Study of Drug Development estimated that the cost to bring one new drug to market is $2.7 billion,” says Theresa Madaline, MD, hospital epidemiologist and assistant professor, Infectious Diseases, Montefiore Health System and Albert Einstein College of Medicine. “Those costs are recompensed through sales of the drugs that successfully earn FDA approval and make it to market. In particular, agents that are used by patients continuously for chronic or long-standing conditions, or products that can command a high price due to life-saving properties, such as cancer drugs, are considered wise investments by pharmaceutical companies due to the potential for long-term revenue and high reimbursement.”

Antimicrobials, on the other hand, are typically used by patients for a short time to treat an infection and run the risk of becoming obsolete in a few years if bacteria becomes resistant to the drug.

“Moreover, hospitals are loath to add new drugs to their hospital formularies when cheaper alternatives with greater availability of long-term safety data exist, and antimicrobial stewardship programs work diligently to restrict utilization of broad spectrum agents in order to preserve them for those patients with highly resistant infections,” says Madaline. “As a result, many large companies no longer invest in research and development of antimicrobials due to shrinking profit margins.”

The few small companies that still pursue antimicrobial drug development face slim margins and that pursuit recently led one small pharmaceutical company to bankruptcy. If this trend continues, effective antibiotics may no longer be available to treat vulnerable patients.

“Following the golden age of new antibiotics, from the 1950s to the 1970s, the rate of introduction of new antibiotics began to decline dramatically in the 1980s, and the pipeline has been running dry, while drug-resistant infections have increased and new genetic mechanisms of resistance have emerged and spread rapidly around the world,” says Hughes. “Although some new antibiotics have recently been introduced, most represent minor modifications or combinations of older drugs. Few target emerging multidrug-resistant Gram-negative bacterial pathogens which cause life-threatening infections.”

Hospitals have already seen significant numbers of difficult-to-treat, highly-resistant bacterial infections and, in rare cases, infections caused by bacteria resistant to all known antibiotics.

Without effective means to fight infections, hospitals are also finding it difficult to treat patients for other conditions.

“The problem of antibiotic resistance gets worse every day,” says Helen W. Boucher, MD, FACP, IDSA, director of the Infectious Diseases Fellowship Program and a professor at Tufts University School of Medicine. “We...
Interventions to Prevent Transmission of Methicillin-Resistant Staphylococcus Aureus (MRSA) in Acute Care

CORE STRATEGIES

- The Centers for Disease Control and Prevention (CDC) continues to recommend placing patients colonized or infected with MRSA in private rooms and on Contact Precautions in inpatient acute care settings.
- Use dedicated patient-care equipment (e.g., blood pressure cuffs, stethoscopes), and single use disposable items (e.g. single patient digital thermometer) whenever possible to lower upfront costs.
- If common use of equipment for multiple patients is unavoidable, clean and disinfect such equipment before use on another patient.
- Provide regular competency-based training on use of personal protective equipment and monitor adherence.
- Place patients with excessive wound drainage (i.e. suggests an increased potential for extensive environmental contamination and risk of transmission) on Contact Precautions and in a private room regardless of multidrug resistant organisms (MDRO) carriage status.

SUPPLEMENTAL STRATEGY

- Consider active surveillance testing (screening) for MRSA on admission to acute care facilities. Screening could be limited to high-risk patients (e.g., prior healthcare exposure) or admission to high-risk settings (e.g., intensive care unit).

1. Those found to be colonized with MRSA should be placed in private rooms and on Contact Precautions.
2. Active surveillance testing could be combined with source control strategies as described above for high-risk patients (i.e. ICU patients and those outside the ICU with CVCs or Midline Catheters).

Source: Centers for Disease Control and Prevention

have patients dying from antibiotic-resistant infections, and we are having problems with patients who can’t get organ transplantation surgery or cancer treatment because they have infections that we can’t treat.”

Antimicrobial stewardship programs are a key part of keeping currently used antibiotics from becoming ineffective, as these hospital programs promote judicious use of existing antibiotics and help curb the spread of antibiotic-resistant bacteria.

“This is most often accomplished by upfront restriction of broad-spectrum antimicrobials without discussion and approval by an antimicrobial stewardship team pharmacist or clinician, and/or by auditing the use of certain antimicrobials and discussing alternatives or limiting duration with prescribers,” says Madaline. “This approach is effective in reducing sub-optimal or inappropriate broad-spectrum antimicrobial use and limiting bacterial resistance over time. Drug resistant infections carry a higher risk of mortality for patients, and as bacteria develop increasing resistance, the potential exists for infections that we are unable to treat due to a complete lack of effective medications.”

Medicare reimbursement for these programs is essential because the Centers for Medicare and Medicaid Services is the single largest payer in the U.S. healthcare system.

“In 2017, 17.2% of the U.S. population of more than 58 million people, were covered by Medicare alone, and that number is expected to grow to 63 million by 2020,” says Madaline. “Approximately 40% of all Medicare spending is on hospital services. With such a large market share, Medicare reimbursement is a crucial consideration for pharmaceutical companies looking to develop and market new drugs and for hospitals seeking reimbursement for treatments rendered.”

Initially, some hospital antibiotic stewardship efforts focused on cost-savings initiatives.

“But antimicrobial stewardship is so much more nuanced than just cost considerations,” says Clare N. Gentry, MD, medical director for antimicrobial stewardship for Houston Methodist Hospital in Texas. “With exciting innovations in diagnostic testing for infection, new guidelines for dosing of various antibiotics, more robust data to guide in planning duration of antibiotic therapy, and an increasing role for IT in optimizing antibiotic use, the multidisciplinary stewardship team is critical in providing high quality care to patients.”

The Infectious Diseases Society of America identified antibiotic resistance to be an important issue more than 10 years ago. Concern prompted the bipartisan Generating Antibiotic Incentives Now (GAIN) Act of 2012, which extended the exclusivity period, during which certain antibiotics can be sold without generic competition, by five years. Although GAIN helped facilitate the development of new antibacterial drugs, more steps need to be taken. A 2016 British review on antimicrobial resistance estimated that to counter multidrug resistant bacteria, 15 new antibiotics will be needed during the next decade. Four of those antibiotics would have to be new formulas, while the rest could improve existing formulas.

An ideal multifaceted strategy includes additional incentives to bring new drugs to market, as well as improved surveillance for drug-resistant organisms in humans, animals, and the environment; strengthens infection control efforts in healthcare settings; and fosters the development of rapid diagnostic tests to support stewardship efforts. The development and use of vaccines can prevent diseases which might otherwise be treated with antibiotics. Education on appropriate antibiotic use is also essential.

“Stewardship teams need to take the lead locally in educating medical personnel and patients about the risks of antibiotic underuse and overuse and the role that both of these issues can play in increased antibiotic resistance,” says Katherine Perez, PharmD, the pharmacy lead for Houston Methodist’s antimicrobial stewardship team.

Antibiotic resistance is both a local and a global problem.

“At the global level, there is also a need to ensure the availability of high quality, critically important antibiotics at the point of care and to improve sanitation and hygiene programs,” says Hughes. “Implementation of the needed multifaceted strategy will require a collaborative interdisciplinary One Health approach involving human health, animal health, and environmental health professionals, strengthened public-private partnerships, and sustained political will.”

The DISARM bill was written with IDSA input, so practicing infectious diseases clinicians had substantial influence in shaping the bill’s priorities.

“DISARM addresses a crisis in our country and around the world,” says Boucher. “It is a small step forward, but a meaningful small step forward.”
Serious geopolitical and social forces are converging to create the conditions, on a scale unique in history, for a major respiratory pandemic.

Few hospitals - let alone the broader responder community - are ready for the acute scale up of trained personal and equipment required to manage and contain a respiratory pandemic. In such a global crisis the initial phase will rely on the health and commitment of healthcare teams.

Prioritising protection of healthcare workers from primary to regional hospitals can ensure a resilient frontline defence. Logically when dealing with respiratory outbreaks, the focus is on the respiratory equipment.

Recent experience of Severe Acute Respiratory Syndrome (SARS) in 2002 and Middle East Respiratory Syndrome (MERS) in 2015 highlighted the vulnerabilities around use and supply shortages of disposable respirators.

Commentators and industry experts are advising infection control teams to examine their PPE procedures and evaluate new re-usable respiratory protection devices in their preparations to protect staff and contain and manage an imminent public health crisis.

A white paper for hospital frontline workers, first responders and management prepared by CleanSpace Technology, developer and manufacturer of CleanSpace™ Respirators.

Download and read these whitepapers InfectionControlToday.com/media-assets
Mitigating cross-contamination risks during UPGIV procedures is essential for protecting patients and reducing costs.
can fail; clinicians may inadvertently puncture covers with the access needles, causing site contamination. These contamination concerns have led to a greater focus on the level of disinfection a probe should undergo between procedures, which is precisely where many of the various guidelines differ.

Confusion Over Disinfection Procedures
Most published guidelines rely on the use of the Spaulding Classification system, a widely accepted standard designed to determine the level of disinfection required for reusable medical devices based on the potential risk of infection posed to patients.

The Spaulding system has three device classification categories: critical, semi-critical, and non-critical. Devices that may come into contact with sterile tissue of the bloodstream are classified as critical. Devices that come into contact with non-intact skin, mucous membranes, blood or other bodily fluids are classified as semi-critical. Devices that only contact intact skin are considered non-critical.

Based on this system, critical and semi-critical devices require high-level disinfection (HLD), which is defined as the complete destruction of all microorganisms on or in a device. Devices used in non-critical procedures require low-level disinfection (LLD), typically achieved through the use of a germicidal spray or wipe to eliminate some viruses and bacteria. Differing interpretations of these categories, as well as data on the efficacy of various barrier methods, has led to different safety recommendations.

For instance, both AIUM and the American College of Emergency Physicians (ACEP) require the use of sterile gel and a protective cover during PIV procedures. The organizations conclude that with these infection control methods, LLD is justified. Other groups have a different take, including the CDC’s Healthcare Infection Control Practices Advisory Committee (HICPAC), the Association for Vascular Access (AVA) and the Association for Professionals in Infection Control and Epidemiology (APIC). These groups assert that even with the use of probe covers, Ultrasound IV (UGPIV) is classified as semi-critical. Devices that only contact intact skin are considered non-critical.

A recent survey of infection preventionists revealed a high degree of non-compliance with infection control guidelines for UGPIV.

While hospital policies establish the management of probe disinfection, guidelines can help drive change based on the evidence. Currently, more organizations appear to be supportive of the greater safety controls of the Spaulding system by requiring HLD for ultrasound probes involved in any invasive procedure, including UGPIV insertions. APIC and AVA are currently working on revised guidelines to address these issues, which could provide much needed clarity for vascular access clinicians and infection control professionals.

Better Barrier Protection
In addition to proper disinfection, some barriers have been shown to be effective in safeguarding procedures and preventing further insertion site contamination. Barriers like sterile probe covers and use of transparent film dressings may provide more assurance of asepsis within the procedure, providing an added level of protection from pathogens.

It’s important to note, however, that film dressings that are applied to the probe, such as Tegaderm, are not recommended by ultrasound manufacturers or organizations such as AVA. These dressings have great variability in application and may leave a film residue on the probe, resulting in deterioration of the vital transmission surface.

As an alternative to traditional sterile probe covers, facilities might consider a combination sterile barrier and film dressing that prevents probe contact with blood or non-intact skin and uses layers of plastic over the dressing to reduce the risk of needle penetration. A sterile barrier and securement dressing like the UltraDrapeTM (Parker Laboratories), designed specifically for UGPIV procedures, currently meets this criteria by separating the probe and gel from the insertion site. With this sterile barrier dressing, ultrasound gel is applied to a removable film layer. This keeps the puncture area dry and free from gel, while still enabling visualization of the target vessel through the dressing with ultrasound.

Even with proper disinfection, applying gel to the skin may contaminate the puncture site and leave behind gel residue, making dressing adherence difficult. A barrier and securement dressing that prevents gel from reaching the IV site enables clinicians to better maintain sterility of the needle, catheter, and prepped skin of the insertion area. This type of dressing also eliminates concerns about gel being accidentally injected into the bloodstream. The top layer where the gel is applied is discarded after use and the dressing slides over the IV catheter, effectively eliminating the time-consuming post-procedure skin clean up.

Looking Ahead
There is a clear need for the vascular access community to establish a standardized protocol for ultrasound-guided peripheral IV insertions and probe disinfection. Ideally, guidelines will address issues including the use of probe covers, sterile gel, and barriers as well as appropriate probe disinfection procedures. We should look to the results of future studies to guide decisions for disinfection and aseptic management of UGPIV and other ultrasound-guided procedures.

Ensuring safety for patients is the ultimate goal, while also responsibly considering the time and cost required for UGPIV procedures. A standardized protocol, proper training for all staff members and teams involved in ultrasound-guided procedures, and the adoption of technology that promotes a more aseptic insertion technique may improve patient safety while increasing efficiency and lowering costs associated with UGPIV.

Nancy Moureau, RN, PhD, CRNI, CPHI, VA-BC, is an internationally recognized expert and speaker in the field of peripherally inserted central catheters and vascular access practice. As the owner and CEO of PICC Excellence, Moureau creates online educational programs and works with companies to provide education to clinicians. She can be reached at nancy@piccexcellence.com.
EPA clears Medline’s MicroKill Wipes to Combat C. auris

For the first time, hospitals and clinics have a tool to combat Candida auris (C. auris), a multidrug resistant fungus that can cause serious infections in hospitalized patients. Medline announced the EPA has cleared its Micro-Kill Bleach Germicidal Bleach Wipes to be marketed as killing the fungus on hard, non-porous surfaces. The fungus, which has a mortality rate of 35%, has been shown to linger in healthcare facilities despite efforts to eradicate it with traditional disinfectants. The fungus, which can be difficult to treat, has caused outbreaks worldwide, including New York and Chicago.

The announcement solidifies Micro-Kill Bleach Germicidal Bleach Wipes’ place in Medline’s industry-leading portfolio of infection prevention strategies and products, the company says.

“Candida auris has emerged as a new and alarming threat, and until now healthcare providers and environmental staff (EVS) had no proven tools to combat it. What we’ve shown with the Micro-Kill Bleach Germicidal wipes is an effective way to disinfect hospital surfaces, where C. auris tends to be persistence in the environment. Our goal is to take a proactive approach to combating this pathogen,” says Rosie D. Lyles, MD, director of clinical affairs at Medline. “Through the collective work of Medline’s infection prevention team, we’ve developed a way to effectively reduce cross contamination of C. auris using Micro-Kill bleach and proper hand hygiene.”

www.medline.com

Environment Services

EarthSafe Unveils New Multi-Purpose Cleaner and Disinfectant

EarthSafe introduces PUR:ONE—A one-step cleaning and disinfection solution for high-touch surfaces and floors, and the new front-end component of the all-encompassing EvaClean System. It’s the first single-step cleaner and disinfectant to receive EPA registration as effective against bacteria in biofilm and is on the K-List of approved products for use in cases of Candida auris, plus other emerging pathogen threats, which are vital concerns in healthcare. While PUR:ONE is powerful enough to kill C. diff in four minutes, this broad-spectrum chemistry also works for daily cleaning and floor disinfection, the latter typically lacking in most cleaning protocols. With a top NFPA rating of triple zero, it’s also safer for personnel, patrons and patients, and the only sporicidal disinfectant that won’t damage equipment or floor finishes.

Like EvaClean’s PURTABS sanitizer and disinfectant, PUR:ONE is a NaDCC pre-measured tablet concentrate that is sustainable, stable and economical. Because EvaClean’s entire program is standardized around a single chemistry solution, it streamlines cleaning processes from beginning to end, reduces potential failure points due to human error, eradicates chemical hazards and exposure, increases worker safety, and ensures a higher level of compliance.

The difference is in the application method. PURTABS are designed for use with EvaClean’s Protexus Electrostatic Sprayers, while PUR:ONE works with existing microfiber cleaning programs, as well as dry wipes and spray bottles. It can also be mixed on the go at a workstation cart, the ideal single dosing solution for floor disinfection using disposable or launderable microfiber mop heads.

www.earthsafeca.com

Healthmark’s EndoDolly to Transport Endoscopes and Stands

Healthmark Industries recently debuted EndoDolly™ to its endoscope product line. Manufactured from stainless steel, the EndoDolly™ is designed for hanging scopes and stands on a five-wheel locking base for ease of transportation. The EndoDolly™ is equipped with three self-adjusting extension poles that can be individually raised by simply touching a pressure button, which allows the user to extend the two outside poles to 8 feet and the middle pole to 10 feet.

Located at the top of each pole is a lock tight hook holder that can accommodate two scopes per pole and supports flexible scopes up to 15 pounds per pole. Each self-adjusting pole comes with polycarbonate cups that allow for the scope tip to be placed during transportation, storage, or quality assurance testing.

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