March/April 2018

Volume 1 ▪ Issue 2

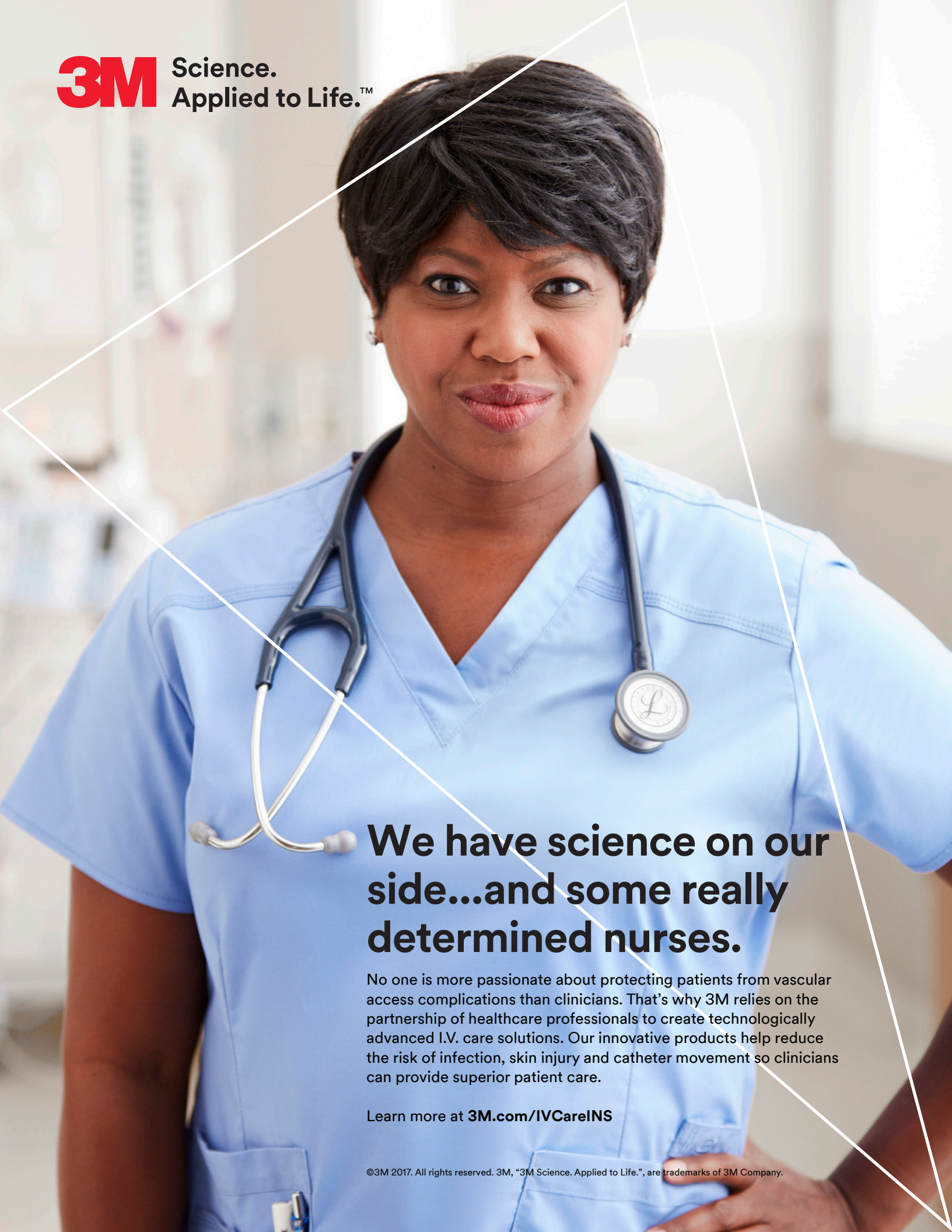
INSIDER

The official membership news publication of the Infusion Nurses Society

Annual Meeting Preview

INS Board of Directors Election Results

A Conversation with Elizabeth Smart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2018-2019 INS BOARD OF DIRECTORS ELECTION RESULTS

INS is pleased to welcome Roberta "Lynn" Deutsch, MSN, RN, CRNI®, VA-BC, as our new president-elect Ms. Deutsch is currently a vascular access nurse at Dell Seton Medical Center/Seton Healthcare Family in Austin, Texas.

Angela Skelton, RN, CRNI®, was elected as a new director-at-large. Ms. Skelton is currently manager of outpatient chemotherapy/infusion services at United Regional Health Care System in Wichita Falls, Texas.

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Change Is Inevitable for Tomorrow's Health Care

Pamela Jacobs, MHA, BSN, RN, CRNI®, OCN®, INS President, 2017 – 2018

A decision has been made to change again. But why?

To understand that age-old question, lessons can be learned from Hiatt and Creasey's, "Change Management: The People Side of Change."[1] First, there must be a reason for change. Every change may have a different reason, such as the need for growth, patient satisfaction, cost control, improvement in service or quality, and many more. But changes that lie ahead must be different from the present and hopefully will lead to desired outcomes.[1]

To succeed, change must be embraced by everyone affected. For example, health care organizations that have implemented electronic health record (EHR) systems have experienced massive change. Every individual who used the new EHR was required to learn new skills and embrace the new technology.[1]

The process for changing individual behavior is best described by Prosci's ADKAR Model.[1]

ADKAR can be used as a communication framework when individuals think a change is a waste of time, believe what is currently being done is perfectly fine, feel kept in the dark about change, and cling to old ways of doing things. People want to know when the change is expected, how it will affect them in the performance of their role, and if training will be provided.

Focusing on the ADKAR model helps the leader in conversations about change, for instance: Do you understand and agree with the reasons for this change? Do you want this change to happen? What would cause you to want this change? Do you know how to make the change? Are you capable of performing the new skills, and are you receiving the necessary support and reinforcement to sustain this change? Asking these simple questions may help target an isolated gap in the change process.[1]

One of the greatest and best-known authors of change management is John P. Kotter. In his book, "Leading Change,"[2] he outlines 8 reasons organizations fail to change:

The 5 Components of ADKAR

- **A** = **Awareness** of the change and an understanding of why it's needed
- **D** = **Desire** to make a personal choice to accept and commit to the change
- **K** = **Knowledge** includes education and training to learn how to make the change
- **A** = **Ability** is demonstrated proficiency to achieve desired outcomes
- **R** = **Reinforcement** is reward, recognition, and compensation that sustains the change

1. **Allowing complacency:** This happens when there is no sense of urgency. It's often underestimated how hard it is to move employees from their comfort zones, and because of a leader's own actions, or inactions, reinforcement of the status quo may inadvertently occur.
2. **Lack of a powerful guiding coalition:** Even the most dedicated individuals need guidance.
3. **No clear vision:** Visions inspire, and as Kotter says, "Whenever you cannot describe the vision driving a change initiative in 5 minutes or less and get a reaction that signifies both understanding and interest, you are in for trouble."[2(p9)]
4. **Under-communicating the vision in words and deeds:** Change is undermined if communication is inconsistent.
5. **Permitting obstacles that block the new vision:** Even if the roadblocks are in the heads of people, there is a challenge to convince them otherwise.
6. **The failure of creating short-term wins:** Change takes time. Short-term wins must be created by the leader who is looking for clear improvement, reaching and achieving goals, and rewarding the employees involved.
7. **Declaring victory too soon:** When this happens, the urgency of the change is less intense, the guiding coalition loses power, and the vision becomes unclear. Tradition takes over, and resisters of change are quick to spot the opportunity to undermine the effort.
8. **Neglecting to anchor change:** It's often said, "that is just the way we do it around here," and when the pressure of change is removed, new behaviors are apt to revert to what is comfortable.[2]

Traditionally, management training has been focused on preparing budgets, organizing, staffing, controlling, and problem-solving. Developing leaders who can create and communicate change is the future. Vision, communication, and empowerment are leaders' keys to change. Leaders must be given opportunities to learn, blossom, test themselves, and grow. Through trial and error, coaching and encouragement, a leader can reach his or her potential to lead change. Leaders recognize that change is not to satisfy their own ego or a knee-jerk reaction to yesterday's events. Change is meant to make improvements. Change is dynamic, never boring, and accomplishing it is fun.[2]

Nurses have experienced a lot of change over the past years and will continue to do so in the future. Nurse leaders who commit to getting out of their comfort zone, taking risks, assessing failure, listening to others, and remaining open to new ideas will be the ones who lead change in tomorrow's health care.

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Michael Passwater, MT(ASCP)SBB, DLM, CSSGB(ASQ)

BIO:
Michael Passwater, MT(ASCP)SBB, DLM, CSSGB(ASQ), is certified by the American Society of Clinical Pathology as a medical technologist, a specialist in blood banking, and a diplomate in laboratory management. He has worked in clinical laboratories for 26 years. For the past 12 years, he has been the manager of the transfusion service and transplant laboratories at Vidant Medical Center in Greenville, North Carolina. Vidant Medical Center is the flagship hospital of Vidant Health, serving 29 counties in Eastern North Carolina. Michael was a faculty member at INS National Academy 2016 in Cincinnati. He remains fascinated by the immune system, hemostasis, and optimizing safe, efficient, and efficacious care processes.

Q & A

INSider: **What is transfusion therapy?**

MP: Transfusion therapy is the practice of collecting blood elements—red blood cells, platelets, and plasma—to later infuse those elements to treat deficits in tissue oxygenation, hemostasis, and other circulatory disorders. Blood transfusion can be an important supportive therapy, allowing a person to withstand intensive primary treatments, such as major surgery or myeloablative chemotherapy. In other situations, such as hemolytic disease of the fetus and newborn, blood transfusions may serve as the primary treatment. In recent years, the term *patient blood management* (PBM) has been growing in popularity throughout the world. The term PBM is an attempt to encourage focus on a comprehensive plan, including conserving a patient's own blood supply while optimizing his or her own blood production and hemostasis status before, during, and after intensive interventions, in addition to any blood infusions that may be necessary during the intensive treatment.

INSider: **How many hours a week are you in a laboratory? And how do you introduce new research into practice?**

MP: My office is in the transfusion service and kidney transplant laboratory area. As a manager, much of my time involves administrative duties—ensuring the incredible staff has the tools

they need to provide excellent care and service every day. I especially enjoy learning to operationalize the latest treatment strategies with the laboratory staff and interdisciplinary teams. Their flexibility, creativity, and willingness to do the "impossible" is inspiring.

Working in Eastern North Carolina where an airplane first flew successfully, I am fond of aviation pioneer Orville Wright's remark, "If we all worked on the assumption that what is accepted as true is really true, there would be little hope for advance." It's fun to learn new things and to learn that some "old things" are not as true as we once thought.

INSider: **In your opinion, what are some steps that could improve transfusion safety?**

MP: On the supply side, continue improving storage solutions to decrease the "storage lesion" and increase the "physiologic buffering capacity" of blood products. This may include expanding the types of blood products available to tailor products more specifically to the indication for transfusion.

On the patient/treatment side, minimize the need for transfusion. Our health care system, like many, has safely reduced transfusions by more then 20% in recent years. Better care with less blood is possible. Additionally, reliable electronic safety checks and the development of cost-effective strategies to provide more complete antigen matching for red blood cell transfusions for chronically transfused patients may improve safety and reduce alloimmunization.

INSider: **What are some of the educational and training challenges related to alloimmunization prevention?**

MP: In daily practice, attention to the mundane, but critically important, specimen- and patient-identification tasks, as well as understanding specimen volume, frequency, and time requirements for pretransfusion testing can be challenging.

Personally, unlearning the over-simplified immunology of long ago has been challenging for me. Immune cells are highly versatile and highly interactive with other cells and biochemicals in their immediate environment. New wrinkles in these interactions are discovered every year.

Clinically, individualizing care plans and recognizing when to transfuse and when to rely on other options is an ongoing learning exercise.

INSider: **Can you explain the differences between inflammation and antibody production?**

MP: Inflammation is a more immediate and more general response to any tissue damage. When groups of cells are stressed, they leak different chemicals and display different chemicals on the outside of their membranes—an internal "911 call" to attract both the police to get rid of intruders and the rescue squad to repair and rebuild the injured tissue. Initial antibody production, if it occurs, typically happens later in the response. It is one of several tools the "bomb squad" or the "police" may employ after responding to the scene of distress. Inflammation often occurs without antibody production, but antibody production rarely, if ever, occurs in the absence of inflammation. (In addition to the target antigen, vaccines contain adjuvants and other immune-stimulating compounds to mimic a "danger signal" from tissue inflammation.) The severity, location, and cause of the inflammation, as well as genetic and environmental host factors, seem to influence the likelihood of antibody production.

INSider: **What trends are you seeing in the identification of antibody formation and/or other autoimmune issues?**

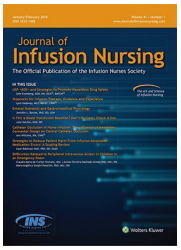
MP: The incidence of autoimmune issues appears to be increasing worldwide. Increased detection and recognition of these issues are likely factors, but the possibility of increased exposures, as well as genetic and other environmental changes influencing immune system development and function, deserves further study. It's estimated that 23.5 to 50 million people in the United States suffer from any of 80 to 100 autoimmune conditions. The National Institutes of Health has estimated that direct health care costs related to autoimmune diseases are in the range of $100 billion. Consequently, the study of autoimmune diseases has become a priority for the National Institute of Allergy and Infectious Diseases.

INSider: **What are your most challenging cases?**

MP: Sickle cell disease can be especially cruel. I hope to see the day when a reliable cure is readily available. In the meantime, determining if and which alloimmunizations to red blood cells are present during a hemolytic crisis is very challenging. I am grateful to have the privilege of working with hematologists and pathologists who are adept at supporting people with hyperhemolysis syndrome and other hemolytic crises with minimal use of red blood cell transfusions.

It has also been gratifying to help implement processes that make antifibrinolytics and blood products more readily available for trauma patients in the hospital and in the field.

For more in-depth information, INS encourages members to read Michael's article, "Antibody Formation in Transfusion Therapy," in the March/April 2018 issue of the Journal of Infusion Nursing *or online at journals.lww.com/journalofinfusionnursing. You can also listen to his podcast on the INS LEARNING CENTER at www.learningcenter.ins1.org/products/antibody-formation-in-transfusion-therapy.*



Blood Sampling From Central Vascular Access Devices

Michelle Berreth, BSN, RN, CRNI®, CPP, INS Nurse Educator

Information obtained from laboratory blood tests can be invaluable to treatment decisions; for some therapies, blood tests are essential. Vascular access devices, in particular central vascular access devices (CVADs), initially seem to offer the best method for obtaining blood samples, yet they can place patients at risk of costly complications. This article discusses various methods of obtaining blood samples from CVADs.

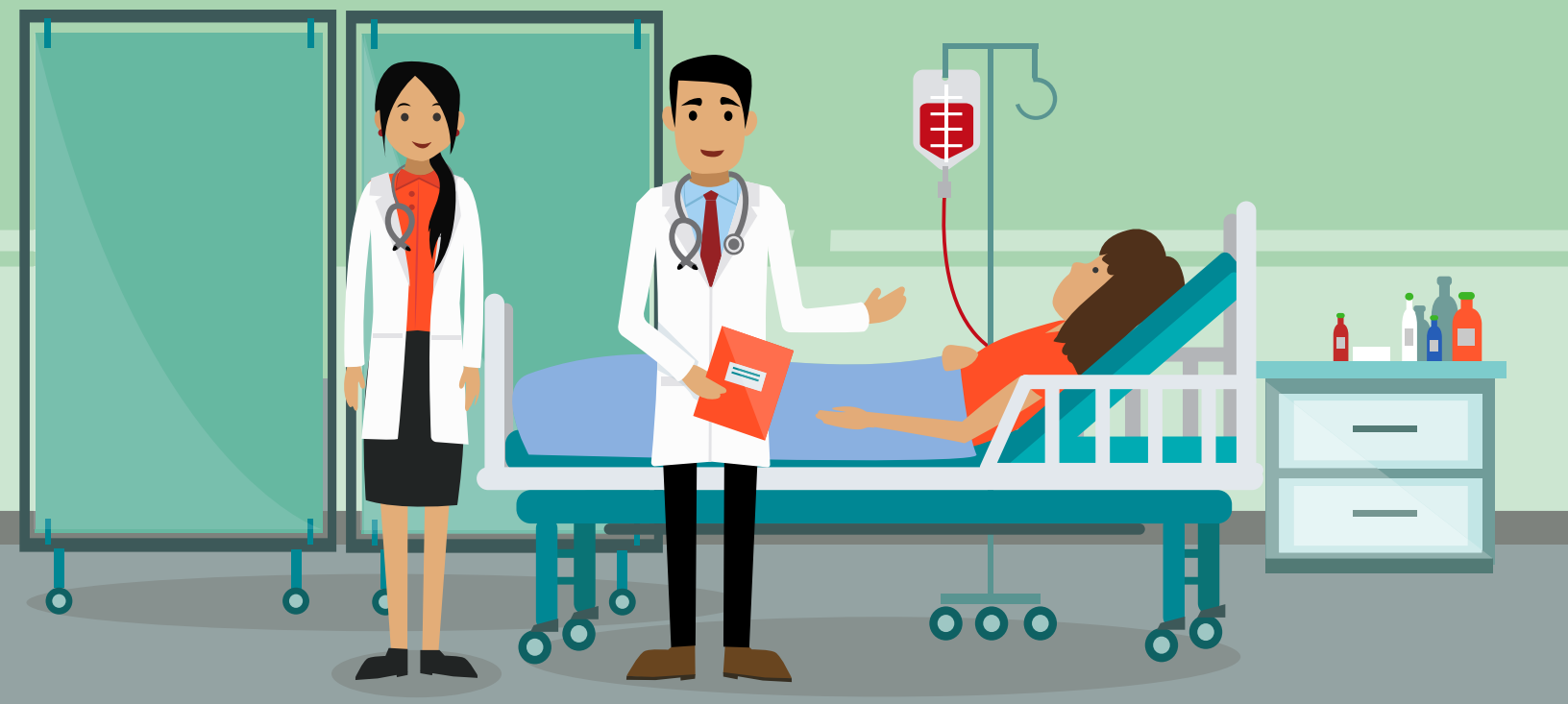
The tip of a CVAD terminates "in the lower segment of the superior vena cava at or near the cavoatrial junction…for lower body insertion sites, the CVAD tip should be located in the inferior vena cava above the level of the diaphragm."[1(S46-S48)] These major blood vessels route all deoxygenated blood from the body to the heart. Blood flow rates reach 2000 mL/min, ensuring rapid dilution of intravenous medications and solutions administered through implanted ports; peripherally inserted central catheters; tunneled, nontunneled, single, or multilumen catheters.[2]

The decision to use a CVAD as the source for obtaining blood samples needs to be considered carefully. It may seem an obvious choice, but there are risks associated with using a CVAD that can lead to serious complications. Bloodstream infections, hospital-acquired anemia, or catheter dysfunction are all possible. Results of monitoring levels of certain medications can be inaccurate if the sample is drawn from a lumen being used to infuse the drug or if the CVAD is made of certain materials.[1(S86-S91)]

Four methods to obtain blood samples from CVADs have been identified. In a literature review examining blood-draw methodologies, it was noted, "the best methods for blood collection reduce the risk for infections, occlusions, thrombus formation, and blood loss that require therapeutic interventions."[3(para6)] Another literature review, however, noted "little evidence exists to support any one method from drawing blood samples from vascular devices."[4(para6)] Methods include the reinfusion, dead space, discard, and push-pull methods.

The Reinfusion Method

This method was thought to limit the amount of blood loss that might result from frequent sampling. The amount of



blood required for discard was withdrawn into a syringe and set aside. After the blood sample was obtained, the so-called *discard blood* was reinfused into the patient.[5] This method is not recommended because of the risk of discard contamination and clot formation.[1(S86-S91)]

The Dead Space Method

This method wastes only the amount of blood needed to fill the volume of the CVAD and any add-on devices. A waste syringe is attached and, without flushing, the CVAD is aspirated until blood just reaches the syringe barrel. This syringe is removed and discarded, and a sample is obtained.

The Discard Method

This method is more frequently used for blood sampling in adults.[6] Typically, 5 to 10 mL of blood is aspirated from the CVAD and discarded before the sample is obtained (amounts vary from 3-25 mL).[4,5] In one study, nearly 100 mL of blood was discarded as waste on average per patient per week.[5,6] In addition to the volume of blood withdrawn for the actual sample, patients were at risk for iatrogenic, or hospital-acquired anemia.

The Push-Pull Method

Also referred to as the mixing method,[1(S86-S91)] the push-pull method minimizes blood loss related to blood sampling. A syringe is attached to the CVAD and blood is gently aspirated and then reinfused without detaching the syringe. This push-pull cycle is repeated 3 to 5 times. Then the syringe is removed and discarded and a new syringe is attached to obtain the blood sample.[1(S86-S91),6] No blood is wasted.

Implications for Infusion Nurses

The methods used to obtain blood samples from CVADs vary from organization to organization. Patient circumstances may also affect how blood specimens are obtained. An infusion nurse competent to perform CVAD blood sampling will assess the risk versus the benefit to the patient, educate the patient regarding the procedure, and maintain strict infection prevention practices in the blood sampling procedure. Best practices and blood conservation strategies help ensure test results will be accurate and that patients won't experience complications such as bloodstream infection, catheter dysfunction, or hospital-acquired anemia.

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Office-Based Infusion Centers: Why Do We Need Them?

Savannah Rudkin, Director, Digital Media and Communications, National Infusion Center Association

Over the last two decades, the evolution of office-based infusion centers has been a source of intrigue, confusion, and excitement to members of the health care community. Many centers are physician-owned and operated and offer a number of important benefits for patients and health care providers alike, including safety, convenience, and affordability.

Unlike many health care facilities, which treat a broad range of maladies, office-based infusion centers focus solely on administering infusible and injectable medications. This narrow focus allows the centers to offer a safe alternative for immunocompromised patients, who may wish to limit their exposure to harmful pathogens. In addition, the more intimate setting gives providers more direct access to patients, allowing them to monitor patient adherence and observe any adverse reactions, which can help improve health outcomes.

Many office-based infusion centers provide a convenient, accessible solution for patients who rely on regular, long-term care to manage their condition. Time can be an important factor for patients with serious illnesses. Office-based centers often are more evenly located across urban, suburban, and rural communities, which can reduce the time patients spend traveling to and from appointments. The nature of these centers typically reduces patients' wait times, enabling them to get in and out with little hassle or interruption in their lives.

For many patients, however, a hospital may be the most convenient, safe, and affordable setting to receive care. But even these patients could benefit from stand-alone offices, which can relieve congestion in hospital-based centers, alleviate some of the pressure on providers, and create a better overall patient experience.

Because patients often spend several hours in an infusion center, many office-based locations emphasize comfort. Most centers provide reclining chairs, as well as blankets, snacks, and even televisions or tablets for patient entertainment. Some centers create an almost spa-like environment, so that patients might even look forward to infusion day.

A major factor in health care today is cost. For many patients, office-based infusion centers offer affordable and life-changing care. Some insurance companies offer incentives to patients who receive treatment in office settings, because their administrative costs and fees are lower. Many offices may accept a broader range of health plans, including federally funded plans, which may not cover the same care in other settings. In this type of system, patients and health insurers save money.

Ultimately, we believe patients should be able to receive treatment at whatever site of care best fits their individual needs, whether it be in an office-based infusion center, a hospital or clinic, or a home setting. The importance of infusible and injectable medications lies in the capacity for personalization they offer. Treatments are engineered, mixed, and administered to address each patient's needs differently. It seems reasonable then that other aspects of care, including the treatment facility, should be as specifically tailored to produce the best possible health outcome for patients.

If you have questions or comments about office-based infusion centers, we encourage you to reach out to NICA through our website or forum discussion community. Your input is invaluable to our mission to advocate on behalf of infusion patients across the nation.

National Infusion Center Association (NICA) is a nonprofit organization formed to improve patient access to office-administered intravenous and injectable medications and therapies. For more information about NICA, visit infusioncenter.org.

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INS2018

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A special preview of this year's speakers, education, and events.

Advocating Empowerment: A Conversation With Elizabeth Smart

Leslie Nikou, *INSider* Associate Managing Editor

Like many moms, her typical day starts with a personal wake-up call from her toddler daughter, tending to her infant son, taking a quick run with her dogs, then tackling the day's to-do list. Sometimes that includes laundry and cleaning the house, and sometimes it includes conference calls, writing, or meeting with survivors of sexual assault and other types of abuse. Elizabeth Smart is a typical mom with an inconceivable story.

Abducted at knife point from her home in 2002 at age 14, then raped, drugged, and abused for 9 months, the story of Elizabeth Smart's ordeal gripped the nation. Incredibly, after witnesses spotted Elizabeth walking with her captors on a public street, she was safely returned to her family in March 2003.

Elizabeth largely credits her parents with aiding her recovery by creating a sense of normalcy when she returned home. While they were sensitive to her needs, they didn't treat her any differently than her siblings, and slowly guided her back into teenage life. After finishing her education, Elizabeth became a staunch advocate for change related to child abduction and founded the Elizabeth Smart Foundation in 2011. She considers herself one of the "lucky ones," not only because she survived, but because she was able to go home.

She wants to lend her voice to other victims and their families worldwide by creating "something that would help shed a light on the brave work done in fighting crimes against children…(and) provide a place of hope, action, education, safety and prevention for children and their families, wherever they may be."[1] Elizabeth strongly believes that empowerment is a key component to victims' survival. She says a traumatic experience might alter the direction of our lives but it does not have to define who we are. Regardless of your background, how you were raised, your financial situation, or whatever impactful event you have experienced, "there is nothing that another human being can do to you that can diminish your worth as an individual."

In addition to promoting the National AMBER Alert system and other child safety legislation, Elizabeth's foundation has propelled her into public speaking events across the country. While the actual events of her abduction have been chronicled in best-selling books and made-for-TV movies, the focus of Elizabeth's talks is not just about what happened to her, it's about hope, survival, and recovery. She reminds her audiences not to compare themselves or their personal traumas to anyone else's, because everyone's situation is unique. There is no "one-size-fits-all" formula to healing, but learning to love yourself again is one of the first steps.

Elizabeth Smart will bring her inspiring and powerful words to INS 2018 this May as the meeting's keynote speaker. Listen to our podcast in its entirety at **www.learningcenter.ins1.org/p/INS2018Keynote**. For more information about Elizabeth Smart and her foundation visit **www.elizabethsmart.com.**

Elizabeth Smart

INS 2018

Keynote Address

Saturday, May 19, 2018

9:00 AM

Reference

1. Elizabeth Smart Foundation. https://elizabethsmartfoundation.org/about/. Accessed February 5, 2018.

#INSROCKS2018

INS 2018 is heading to the shores of Lake Erie and the bustling city of Cleveland, Ohio. This year's annual meeting will include 4 days of thought-provoking educational sessions, peer presentations, round-table discussions, and so much more! We have lined up nearly 4 dozen speakers from all facets of the industry to bring you the latest evidence-based information in the infusion specialty.

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Highlights for attendees will include a chance to test their infusion IQ in an interactive quiz show, ask infusion nurse-experts about the top-10 most common questions and answers, and collaborate in a 2-hour boot camp on immunoglobulin therapy. Accompanying the education, attendees can roam the jam-packed exhibition hall, experience a special event at the Rock & Roll Hall of Fame, and enjoy countless networking opportunities with colleagues.

Can't make it to Cleveland? Take advantage of our Virtual Infusion Education located in the INS LEARNING CENTER. The INS Virtual Infusion Education platform is designed to deliver conference programming directly to your home or office. Programming is presented to a live audience and streamed simultaneously. The program is recorded and available on-demand.

This year's virtual conference, "Infusion Nursing: Why We Do What We Do," will be streamed live on Tuesday, May 22. It will feature expert infusion nurses and provide foundational information about fluids and electrolytes, and pain management strategies. The day will conclude with a mother's testimony on the impact infusion nurses have had in her family's life.

Whether you plan to experience INS 2018 in person or virtually, this year's meeting is a must! Visit **ereg.me/INS2018** for a complete schedule and registration information.

Join INS at the Rock & Roll Hall of Fame! You won't want to miss an evening at this rockin' venue. View the exhibits and connect with colleagues, all while enjoying rock and roll music and a cocktail!

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Probability Sampling Methods

Jeanette Adams, PhD, RN, ACNS, BC, CRNI®, INS Research Committee Chair

Sample plans are an important responsibility for researchers to conduct studies for quality and valid evidence.[1] The sample is a reflection or representation of the population. Determining the appropriate sampling method requires researchers to consider a variety of factors and to make decisions that have an impact on the sample and the generalizability of the outcomes.

This article will identify 3 sampling methods available to researchers commonly known as *probability sampling methods*. The aim of these methods is to provide a representative and nonbiased sample of the population to be studied.

Random sampling

Random sampling means that every participant or item of the population has an equal chance, or probability, of being selected. Usually the researcher uses a lottery system for selection. The main advantage of using random sampling is that the researcher can remain unbiased and objective in the selection process. The major disadvantage of random sampling is that the selection process does not guarantee the researcher will get an accurate representation of the population. A good example is the disproportionate number of gender in each group. A researcher would rarely obtain a 50/50 representation in a sample of 100. Random sampling was used in a study to determine intravascular complications with nontunneled central venous catheters and the location site. The subclavian, jugular, and femoral sites were randomly selected for insertion of the catheter. Findings revealed lower bloodstream infection with subclavian site placement.[2]

Simple random sampling

Simple random sampling requires the researcher to have access to the total population and give every member of the population an equal chance of being chosen for the sample. Advantages of this sampling method are simplicity and representation of the population. Major disadvantages of this method are they are time consuming and expensive. Tavares, Barichello, Mattia, and Barbosa[3] used a simple random sampling method in their study to determine health care workers' knowledge about blood transfusion.[3] The population in this study was the number of health care workers employed by one institution and who worked with blood transfusion. The researchers were able to identify and code each member of the population to select the sample.

Stratified random sampling

Stratified random sampling uses random sampling of segments, or subpopulations, of the whole population. Proportionate representations of each subpopulation are selected. For example, if a researcher was investigating complications associated with each type of vascular access device (VAD) in a hospital, the researcher would identify all types of VADs used in the hospital and the number of each. Suppose the population is 100 VADs and 45 were short peripheral catheters (SPCs), 20 were peripherally inserted central catheters (PICCs), and so on. The percentage of the subpopulation for SPCs would be 45% and the percentage of the subpopulation for PICCs would be 20%. Each subpopulation would be represented proportionately. Nebocat used stratified random sampling in her study on venipuncture using 3 grade levels of nursing students.[4]

The major advantage of using stratified random sampling is that it accurately represents the population. However, the major disadvantage of using stratified random sampling is the difficulty of having populations that are easily classified.

Random sampling, simple random sampling, and stratified random sampling are by no means an exhaustive list of sampling methods. Other examples will be discussed in future issues.

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The Positive ROI on CLABSI Prevention Interventions

Pat Parks, MD, PhD, Medical Director, 3M Critical and Chronic Care Solutions Division

Reducing hospital-acquired infections (HAIs) remains an ongoing patient safety battle for health systems.

It is estimated that 1 in every 4 patients who contract a central line-associated bloodstream infection (CLABSI) dies, making it one of the deadliest HAIs. While estimates vary, a typical cost for a single CLABSI is $45,000, making it one of the costliest infections. Despite the staggering statistics, these infections are largely preventable and more attention has been placed on reducing them in recent years. In fact, the "National and State Healthcare-Associated Infections Progress Report" showed CLABSI rates in the U.S. have decreased by 50% in the last decade. While the progress is encouraging and undoubtedly the result of a lot of hard work, more can be done to bring CLABSI rates closer to zero.

Preventing bloodstream infections doesn't just fall to the hands of frontline staff delivering direct patient care. Everyone in the health system, from the C-suite on down, has a critical role in implementing prevention interventions.

Historically, prevention interventions were thought to be too cost prohibitive. However, a recent study published in *JAMA Internal Medicine* found that properly executing quality improvement interventions could result in 57% fewer bloodstream infections on average. It also found that for every $100,000 a health system invested in quality interventions, they were able to achieve a savings of $315,000. These results show that investing in prevention interventions is worth the effort from both a patient care quality and financial perspective.

So what interventions reap the best quality improvement at the best value?

There is no magic bullet when it comes to infection prevention. Eliminating these complications cannot happen with a single initiative, process or technology. Successful CLABSI reduction requires a comprehensive approach incorporating 3 critical components: properly trained people, implementation of industry-leading guidelines and best practices, and use of the most clinically effective products and technology. Without all 3 components working together, your prevention efforts will fall short. Here's a look at the role you can play in helping your health system execute a successful prevention intervention.

Invest in Effective and Proven Technology

When evaluating products, it's common to want to purchase those that best maintain your margins. But there is more to it than simply purchase price. Every product that enters a health system should be evaluated on the impact it can have on patient safety and infection prevention. Your portfolio of products should include ones that help reduce the risk of infection by protecting the IV line, as well as preventing skin injury and catheter movement. Explore published research to identify products that have been clinically proven to help reduce infection risks.

Take for example, IV securement dressings and the role they play in minimizing infections. Frequent dressing changes are disruptive to patient care, but a study published in *Critical Care Medicine* found that the risk of major catheter-related infection and CR-BSI increased by more than 3-fold after the second dressing disruption and by more than 10-fold if the final dressing was disrupted, independently of other risk factors of infection. Some securement dressings have a transparent window designed to provide easy site visibility, which helps reduce the number of dressing changes and allows staff to identify potential complications more quickly. Selecting a chlorhexidine-impregnated dressing can further help reduce the risk of infections. These dressings help health systems comply with the Centers for Disease Control and Prevention's recently updated "Guidelines for the Prevention of Intravascular Catheter-Related Infections," which specifically call for the use of chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing CR-BSI or catheter-associated bloodstream infection (CABSI) to protect the insertion site of short-term, nontunneled central venous catheters for patients aged 18 years and older.

It's also important to consider products' ease of use. Products that are easy for staff to administer and easy to access can help improve compliance and consistency. For instance, health systems that still use the "scrub-the-hub" method to clean IV access points must rely on staff to manually disinfect the IV port with an alcohol swab for 15 to 30 seconds. This leaves room for technique variation and human error. It also makes it hard for the facility to maintain and measure protocol compliance since there is no visible evidence that the IV access point has been disinfected. Selecting products that enable passive disinfection, in particular disinfecting port protectors, can help minimize human error and provide a visual indication so staff can be confident that the site has been disinfected.

Train and Support Your Staff

Any investment in new technology is useless unless there is an equal emphasis on training your staff on how to properly use it. Change can be challenging and staff are often under strain when new technologies or processes are introduced. That's where you come in. Commit to training and educating staff on the products and processes, which can include one-on-one support or access to resources. This investment not only makes the transition easier, but in turn can help reduce infections.

Equally as important to adequate training is ensuring that the maintenance program—and your staff—are compliant with the latest industry standards and guidelines. With a number of different industry guidelines available, it can be difficult for health systems to stay up to date, maintain compliance, and effectively implement the standards. For that reason, the *Infusion Therapy Standards of Practice* recommend collaborating internally and externally to refine the process. Some device manufacturers serve as partners to health systems who can help staff better understand new industry standards and remove barriers to implementation. Training should occur during implementation, as well as be offered on an ongoing basis to maximize knowledge retention. One health system that partnered with 3M clinical specialists to implement and train staff on a disinfecting port protector system was able to increase staff compliance rates from 27% with "scrub-the-hub" to 80% during the intervention period.

Measure Results

Data are critical to the success of a prevention program. The more you can measure, the more you can improve. Beyond just the mandatory reporting of CLABSI rates, it is important to monitor the success of the interventions. Meticulously and consistently tracking compliance rates can take time and resources.

Manufacturers can help by offering customizable tools that monitor and analyze your department's or facility's progress. Once you have the results, share them with staff and celebrate successes. Recognizing staff members or units that work hard to prevent CLABSIs can help build morale and support your facility's goal of reaching zero CLABSIs.

While everyone is responsible for preventing HAIs, executive leadership is paramount to success. Leadership engagement and data driven interventions with frequent feedback were cited as key components to helping prevent HAIs, according to a study published in the *American Journal of Infection Control*. Support your clinical staff by providing them with the best technology and training that align with industry standards and best practices. When you invest in prevention interventions, you can achieve the best ROI metrics you can strive for—improved patient outcomes and reduced costs.

About the Author
Pat Parks, MD, PhD, is the medical director for 3M Critical and Chronic Care Solutions Division. He is also an adjunct associate professor in the Department of Experimental and Clinical Pharmacology at the University of Minnesota. His passion and responsibilities include research and technologies related to catheter-related bloodstream infections and wound healing.

Sexual Harassment by Patients: Do You Know What to Do?

Jennifer Flynn, CPHRM, Risk Manager, Nurses Service Organization (NSO)

The deluge of sexual misconduct episodes recently reported in the media has put the workplace under the microscope when it comes to appropriate—and inappropriate—behavior. The health care setting isn't immune to this workplace problem. An analysis of claims filed with the U.S. Equal Employment Opportunity Commission (EEOC) from 2005 to 2015 found that 11.48% of claims were from the health care and social assistance industry, the fourth highest and only slightly behind manufacturing at 11.72%.

That number may seem low, but remember it only reflects cases in which a claim was filed. Far more often, no action is taken by the person being harassed, which means actual numbers are hard to come by. However, experts believe that sexual harassment is significantly underreported in health care. Nurses may also be unsure of when a patient's behavior crosses the line, particularly if the patient is perceived as cognitively impaired.

You have a right to protect yourself from harm by reporting inappropriate behavior, and, if necessary, transferring a patient to a new provider. If you need to transfer a patient, however, do so carefully to avoid charges of abandonment.

What is sexual harassment?

The EEOC notes that sexual harassment includes unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature. Harassment is illegal when it is so frequent or severe that it creates a hostile or offensive work environment or when it results in an adverse employment decision, such as the firing or demotion of the victim.

The harasser can be a supervisor, a coworker, a client, or a customer, such as a patient, which is the focus of this article.

A direct approach

The first step in addressing sexual harassment is to speak directly with the patient, unless you feel there is a safety issue. In that case, have a third person present, such as your supervisor or someone from human resources. Set boundaries by making clear that the comments or actions are unwanted. It's important to be firm and note that further action will be needed, if the behavior doesn't stop.

Be sure to document the situation and any conversations you've had with the patient. Be specific, listing dates, times, comments verbatim, and any witnesses to the behavior.

When you need to report

If your efforts to correct the patient's behavior don't work, report the problem to your supervisor. Previous court action by the EEOC indicates that it considers the employer responsible for addressing harassment by patients. The employer must conduct an investigation and take action as indicated.

If you fail to obtain a satisfactory outcome to the investigation, consider consulting an attorney. Above all, remember that your responsibilities as a nurse do not include being the victim of sexual harassment.

If you need to transfer a patient

If the patient's behavior toward you doesn't change, you may need to transfer his or her care to another nurse. Until that can happen, avoid being alone with the patient. Know your ethical responsibility is to provide care until a patient is transferred to another qualified nurse so that you cannot be charged with patient abandonment. Be sure to give the new provider a thorough report of the patient's condition and document in the health record that you did so.

Prevention

Employers and nurses can take steps to prevent sexual harassment. Organizations should have a policy in place that addresses harassment and outlines reporting steps. Patients should know the nurse is a professional, and they should be held accountable, if harassment occurs.

Examples of Sexual Harassment[1]

Physical	• Unwanted touching, grabbing, patting, pinching, hugging, kissing • Constantly brushing up against another's body • Touching an employee's clothing, hair, or body • Cornering
Verbal	• Requests for sexual favors • Questions or comments about the person's sexual fantasies or behavior • Offensive jokes or language • Referring to an adult as sweetie, babe, honey, etc. • Sexual comments about a person's clothing, anatomy, or looks • Repeated catcalls, whistling
Other	• Offensive gestures • Leering at a person's body • Sharing materials of a sexual nature

Protect yourself

You have a right to protect yourself from verbal or physical harassment of a sexual nature. Know your organization's policy and be sure to document the situation. Above all, be a model of respectful behavior for others. In doing so, you can help protect yourself from a liability lawsuit.

It's also important for nurses and other employees to model the desired behavior in front of patients. If you do say something inappropriate, immediately apologize. You can also download a graphic from the American Nurses Association, Civility Best Practices for Nurses, at ***bit.ly/2vJfpgF.***

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Additional Resources

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Safety Briefs

Mix-ups between AuroMedics levoFLOXacin and levETIRAcetam

Given the current scope of product and intravenous (IV) fluid shortages, many facilities are using commercially available premixed IV products as much as possible to decrease the number of IV solutions that must be compounded. Some of these products are being used for the first time in hospitals. Two examples include levoFLOXacin and levETIRAcetam. These premixed IV products may only be available from one manufacturer through the organization's usual purchasing group or wholesalers.

AuroMedics Pharma provides levoFLOXacin in 250 mg/50 mL, 500 mg/100 mL, and 750 mg/150 mL bags, as well as levETIRAcetam in 500 mg/100 mL, 1,000 mg/100 mL, and 1,500 mg/100 mL bags. Some hospitals that started using these products have been complaining that once the overwrap is removed, the bags look very much alike. One hospital alone reported "numerous mix-ups" between the two products. Both drug names start with L-E-V, and there is a shared 500 mg/100 mL strength. Additionally, the font size used on the label is very small and difficult to read (particularly in comparison to other manufacturers' products). The strength for each product is printed within a black background, which is also hard to read. A mix-up was even reported between a 250 mg/50 mL bag of levoFLOXacin and a 1,500 mg/100 mL bag of levETIRAcetam (Figure 1).

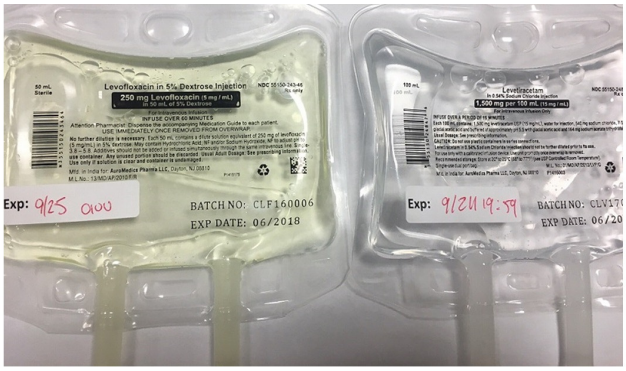

Figure 1. Once the overwrap is removed, the bags of levoFLOXacin (left) and levETIRAcetam (right) look very much alike.

ISMP has contacted the manufacturer and suggested redesigning the labels using a larger font size and tall man letters. Printing the strength within a black background should also be eliminated, as it acts to draw one's eyes away from the drug name. To improve the likelihood that an error will be recognized, ISMP recommends placing any pharmacy-applied label just below the drug name and strength on premixed bags, rather than on the reverse side unless there is insufficient room for the label on the front of the bag. This way, both the title (base solution and/or drug name), as listed by the manufacturer, and the pharmacy label, can be easily scrutinized to make sure they correlate.

In the reports received by ISMP, nurses have also prevented mix-ups by scanning the manufacturer's barcode, not the pharmacy label barcode. Scanning a pharmacy label bar code would not detect the wrong drug if the label was affixed to the wrong bag. ISMP recommends placing the pharmacy label in such a way as to not cover the manufacturer's barcode. However, with the Auro-Medics products, not covering the bar code or the expiration date and lot number presents quite a challenge. Errors could also be detected if these products were scanned before being dispensed from the pharmacy for individual patients, or scanned upon placement and removal from an automated dispensing cabinet. Even keeping the 2 drugs far apart from one another, rather than stored in bins close by, would help.

Leaving the AuroMedics bags in their overwraps until the time of use can also prevent mix-ups, as the overwraps use various colors for the different strengths. The pharmacy label can be attached to the product via rubber band or tape so it can be affixed to the bag immediately before use. However, even that would not help with AuroMedics levETIRAcetam 1,500 mg and levofloxacin 750 mg, each of which share the same orange color on the overwrap (Figure 2).

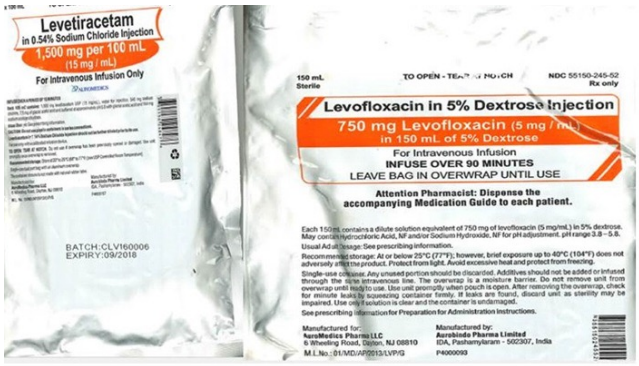

Figure 2. Despite the different strengths, the 1,500 mg bag of levETIRAcetam (left) was mixed up with the 750 mg bag of levoFLOXacin (right).

Confusing dose with administration time

A dispensing error occurred in the pharmacy that involved misinterpreting the "hang time" of 1500 (3 p.m.) as the dose needed for a vancomycin intravenous (IV) piggyback. In fact, the pharmacist stated that he has often caught himself interpreting the time printed on the patient's label as the dose (Figure 3). The mistake has also happened to a pharmacy technician. Since the error, pharmacy has asked its information technology department to modify the label

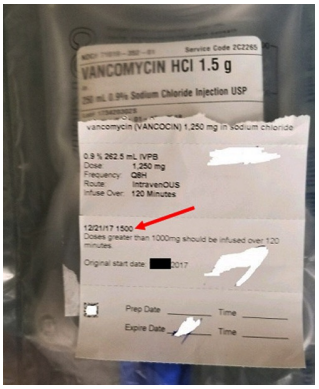

Figure 3. Scheduled administration time (arrow) was mistaken as a dose of "1500" mg.

format to display the time in a format with a colon between the hour and the minutes, so the label reads 15:00 instead of 1500. It may also be helpful to use a larger, bold font for the dose.

Look-alike name pair—VoLumen and Voluven

A patient in obstetrics received oral VoLumen (barium sulfate suspension, E-Z-EM [subsidiary of Bracco]) instead of IV fluid resuscitation with Voluven (tetrastarch, hydroxyethyl starch in sodium chloride injection, Hospira). One might assume that such an error must be next to impossible given the different routes of administration, the typical dose of oral barium sulfate, and the fact that imaging of the gastrointestinal (GI) tract had not been ordered. However, here's how the error happened.

In deciding what to order for fluid resuscitation, the patient's obstetrician consulted with a certified registered nurse anesthetist (CRNA) who recommended Voluven. The obstetrician then typed "V-O-L-U" in the computer order entry system, and VoLumen popped up. Subsequently, 500 mL of VoLumen was ordered instead of the intended Voluven. A hospital pharmacist soon called the prescriber to confirm the odd request, but the prescriber insisted that the drug was what the CRNA told him to order. The pharmacist then called the CRNA on call, but due to a language barrier and unfamiliarity with VoLumen, the CRNA thought the pharmacist was asking about Voluven and stated that it was fine to use this medication. The patient received the entire 500 mL of oral barium (orally) and fortunately suffered no adverse effects other than delaying her overall care.

When clarifying orders, encourage practitioners to use a standard format that helps to ensure clarity of communication (e.g., SBAR), which includes an assessment of the concern. In this case, asking if the patient was scheduled for GI imaging might have clarified the issue with the prescriber and the CRNA. The hospital added these medications to its look-alike, sound-alike drug name list and made modifications in the electronic prescribing system to alert providers when one or the other is ordered. ISMP has contacted each manufacturer as well as the U.S. Food and Drug Administration (FDA) to consider the need for a name change for one of these products.

Unreadable glass ampuls

A hospital pharmacist told us that he received a supply of clear glass ampuls of dimercaprol (BALIN OIL) 300 mg/3 mL manufactured by Akorn (dimercaprol is an antidote given to treat arsenic, gold, mercury, and lead poisoning). When he went to scan the bar code to add it to the product to inventory, he found it could not be read because the dark print on the clear glass was not recognized by the scanner (Figure 4). There was also overlapping text that can be seen through the glass, which may have interfered with readability by the scanner. Looking at the photo, it appears that people also would not be able to read the label very well. Health care professionals would be best served if ampul dosage forms were avoided whenever possible.

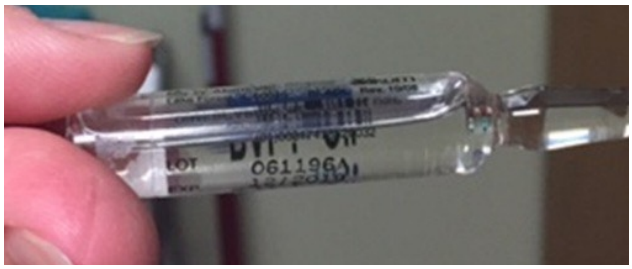

Figure 4. Label is nearly unreadable on the ampul.

An FDA draft guidance states that, "Product container labels and carton labeling should communicate information that is critical to the safe use of a medication from the initial prescription, to procurement, preparation and dispensing of the product to the time it is given to the patient." Poor label design can contribute to medication errors by making it difficult for health care professionals, caregivers, and/or patients to readily locate and understand critical safety information. At a minimum, if manufacturers must make medications available in ampuls, the FDA should require identification of the drug, strength, bar code, lot number, and so on, to be printed in contrasting ink on a paper or ceramic background. ISMP spoke with Akorn, and the company confirmed it is using a clear label on the ampul but is now checking options to improve label readability.

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