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Guidelines in Practice: Medication Safety

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PODCAST

Jennifer Speth, MSN, RN, CNOR

ABSTRACT

Medication errors are preventable events that health care professionals, consumers, and medication manufacturers report to the US Food and Drug Administration. The agency receives more than 100,000 medication-related reports each year, and some reports involve patient death. A variety of sources provide perioperative nurses with information on interventions and practices to prevent medication errors, including the US Pharmacopeia, The Joint Commission, medication manufacturers' instructions for use, safety data sheets, and the updated AORN "Guideline for medication safety." This article provides an overview of the guideline and discusses recommendations for organizational oversight, procurement and storage, retrieval and preparation, labeling, and hazardous medications. It also includes a scenario that illustrates perioperative nursing practices for administering an antineoplastic medication intraoperatively. Perioperative nurses should review the guideline in its entirety and implement recommendations in operative or procedural settings.

Key words: *medication error, compounded medication, hazardous waste, beyond-use date, chemotherapy.*

Medication errors are preventable events that can result in serious patient harm (eg, disability, death) and occur during any phase of the medication-use process (ie, from procuring the medication to monitoring the patient after administration).[1] Health care professionals, consumers, and medication manufacturers submit more than 100,000 medication error reports to the US Food and Drug Administration (FDA) each year.[2] The revised AORN "Guideline for medication safety"[1] provides perioperative team members with recommendations to address the following:

- organizational oversight,
- medication reconciliation,
- procurement and storage,
- ordering and prescribing,
- team communication,
- retrieval and preparation,
- administration,
- transfer to the sterile field,
- labeling,
- irrigation solutions,
- high-alert medications,
- hazardous medications,
- patient monitoring,
- patient education,
- disposal,
- technology,
- documentation,
- personnel education, and
- quality and reporting.

The AORN Guideline Development Team assessed the available evidence and included *regulatory requirements* when the governmental regulations supported the initiative and made *recommendations* when the benefits of the initiative clearly would exceed the harms; in general,

http://doi.org/10.1002/aorn.14034
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high- to moderate-quality evidence supports recommendations.[3] The AORN Guideline Development Team also made *conditional recommendations* when the benefits of the initiative likely would exceed the harms; any level of evidence supports conditional recommendations under certain conditions. The evidence table for the medication safety guideline can be found at *https://www.aorn.org/docs/default-source/guidelines-resources/clinical-research/nursing-research/evidence-rating-and-tables/medication-safety/medication-safety-evidence-table-060623.pdf*.

This article provides an overview of the recommendations associated with organizational oversight, procurement and storage, retrieval and preparation, labeling, and hazardous medications. Table 1 identifies guideline recommendations for some questions that are not discussed in this article. Perioperative nurses should review the revised guideline in its entirety for additional information that may affect their practice.

ORGANIZATIONAL OVERSIGHT

Organizational oversight of medication-use processes can help facilitate standardization and may reduce the risk of medication errors.[1] An interdisciplinary committee comprising representatives from the pharmacy, nursing, and risk and quality management departments and licensed practitioners (eg, surgeons, anesthesia professionals) should manage standard medication processes for the facility.[1] The committee should include key stakeholders (eg, perioperative nurses) as necessary to identify medication-error risk factors associated with their practice. Inclusiveness can promote teamwork and compliance and provide a platform for strengthening policies and procedures.[1]

When developing policies and procedures for medication management in perioperative areas, the interdisciplinary committee should address patient and personnel safety, responsibility, authority, and accountability for all medication-use process phases (eg, procuring, prescribing, dispensing, administering).[1] Although the phases are consistent in all health care settings, there are attributes and situations that are unique to the perioperative setting,[1] including

- a lack of computerized physician order entry with associated decision support,
- a lack of medication order verification in a pharmacy,
- multiple licensed practitioners submitting medication orders,
- multiple clinicians administering medications,
- a lack of standard labeling,
- numerous patient care transitions, and
- sensory distractions inherent to the environment.[4]

From a regulatory perspective, policies and procedures for medication preparation and administration must adhere to all federal, state, and local requirements and align with the nationally recognized guidelines and recommendations.[1] Therefore, the policies and procedures must specify the

- categories of licensed clinicians who can administer medications,
- types of medications that clinicians in different roles can administer,
- required education topics to address before clinicians administer medications,
- location of current and acceptable information on medications,
- method for accessing expertise when pharmacists are not available,

Table 1. Questions Related to Medication Safety and the Associated Guideline Recommendations[1]

Question	Recommendation
What are the steps for handling a medication shortage?	1.8
Can controlled medications be kept on the RN circulator's desk while they are in the preoperative area interviewing the patient?	3.6
How should multiuse medication vials be labeled?	6.6.1
Can hazardous medications be transported in a pneumatic tube system?	12.9.1

Reference

1. *Guideline for medication safety. In*: Guidelines for Perioperative Practice. *Denver, CO: AORN, Inc; 2024. In press.*

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- processes for identification of controlled substance loss or diversion, and
- methods for conducting research involving investigational medications.[1]

Because no current evidence supports the timing of IV fluid administration (eg, before 60 minutes have elapsed after puncture), AORN recommends that policies and procedures specify the length of time that should elapse between puncture of an IV solution container and beginning administration.[1] Researchers obtained samples from 80 IV bags containing lactated Ringer's solution at different time intervals after puncture (ie, immediately; 1 hour later; 2, 3, 4, and 8 hours later) to determine the amount of bacterial growth at each time point; they found no growth.[5]

As a Condition of Participation, the Centers for Medicare & Medicaid Services (CMS) requires hospitals to have antimicrobial stewardship programs for optimizing antibiotic use according to available evidence.[6] Members of a hospital committee involved with antimicrobial stewardship should regularly review perioperative antibiotic administration practices (eg, preoperative antibiotic prophylaxis, redosing of prophylactic antibiotics, antibiotics used in or on wounds) and provide perioperative leaders with feedback.[1] The committee also may be involved with therapeutic antibiotic dosing for suspected infection, which likely has different requirements than antibiotic prophylaxis.

PROCUREMENT AND STORAGE

To help perioperative nurses avoid medication errors, facility personnel should obtain medication in single-dose units, prefilled syringes, and limited concentrations whenever possible.[1] If single doses and prefilled syringes are not available, personnel should procure the medication in a size similar to the requested dose.

When possible, facility personnel also should obtain *compounded medications*—that is, a combination of at least two medications—directly from the manufacturer or from an FDA-registered outsourcing facility.[1] However, preparing a medication (eg, mixing, reconstituting) according to the manufacturer's instructions for use (IFU) is not compounding. Compounded medications are not FDA-approved; the FDA therefore "does not verify their safety, effectiveness, or quality before they are marketed."[7] In addition, use of compounded medications can lead to serious adverse patient events (eg, severe injury, death) because they may be contaminated or lack the originally intended strength, quality, and purity. Outsourcing facilities that are registered with the FDA are likely to adhere to regulatory requirements and good manufacturing practices.[7] When compounded medications cannot be obtained from the manufacturer or an outsourcing facility, personnel should use a pharmacy that meets the standards of the US Pharmacopeia (USP).[1]

When possible, facility personnel also should obtain *compounded medications*—that is, a combination of at least two medications—directly from the manufacturer or from an FDA-registered outsourcing facility.

Because CMS regulations state that "[a]ll drugs and biologicals must be kept in a secure area, and locked when appropriate,"[8] perioperative nurses must store medications securely and limit access to them regardless of the storage location (eg, refrigerator, anesthesia or emergency cart).[1] A staffed OR is considered secure; however, an unoccupied OR that is not located in a locked unit is considered unsecure.[9] Personnel should store medications (including those in emergency and specialty carts) in a standard manner as follows:

- organize individual medications according to the generic name and packaging and avoid storing alphabetically,
- isolate high-alert medications and those that sound or look the same as another medication,
- use individual bins or dividers to separate medications,
- use tall man lettering on labels to draw attention to name differences, and
- verify medication labels are visible.[1]

Perioperative nurses should store multidose vials outside the immediate patient treatment area (ie, operating or procedure room) unless the vial will be used for only one patient.[1]

RETRIEVAL AND PREPARATION

As a Condition of Participation, CMS requires personnel to adhere to federal and state regulations as well as to the licensed practitioner's orders and accepted practice

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standards when preparing medication.[10] To prevent medication errors, personnel should avoid

- distracting or interrupting personnel who are retrieving and preparing medications,
- lengthy time gaps between the procedure and medication retrieval, and
- obtaining medications for multiple patients at the same time.[1]

When retrieving medications, personnel should verify that the beyond-use and expiration dates have not passed and avoid bringing expired medications into the operating or procedure room.[1] The *beyond-use date* relates to the compounding process and indicates "the date and time after which the medication must not be used, stored or transported,"[11] regardless of the expiration date of the ingredients in the compounded medication.[12]

When retrieving medications, personnel should verify that the beyond-use and expiration dates have not passed and avoid bringing expired medications into the operating or procedure room.

After initial cap removal but before withdrawing medication from the vial, perioperative nurses should use alcohol to disinfect the stopper and allow it to dry.[1] Researchers studied microbial contamination of medication vial diaphragms after one of the following: routine handling (ie, removal of the dust cover with clean hands before sampling), exposure of the vial with dust cover in place to an *Escherichia coli*–contaminated aerosol, or submersion of the vial with dust cover in place into an *E coli*–contaminated liquid.[13] Two (17%) of 12 access diaphragms tested positive for contaminants after routine handling and removal of caps. There was no bacterial growth for any vial diaphragms after exposure to aerosolized *E coli* for 30 minutes and 24 hours. One (20%) of five diaphragms showed bacterial growth 30 minutes after submersion in the liquid contaminant, and all five diaphragms showed bacterial growth at 24 hours after submersion. The researchers recommended disinfecting medication vial stoppers before accessing the contents.[13]

Each time clinicians withdraw medications from vials, they should use a new sterile access device (eg, needleless device, blunt needle).[1] Limiting the use of sharps can reduce the risk of injury and exposure among health care personnel.[14] AORN conditionally recommends using a needle and syringe if a needleless method is not available or feasible.[1] For example, to reduce the risk of transferring glass particles to the patient, a blunt filter needle may be used to withdraw medication from a glass ampule.

As a regulatory requirement,[1] personnel must adhere to federal, state, and local regulations[8,15] and accepted standards[11] when compounding medications. AORN conditionally recommends compounding medications in the OR for immediate use when no other option (eg, obtaining the compounded medication from an FDA-registered outsourcing facility) exists.[1] Personnel should adhere to the USP requirements[12] when hospital-based compounding is necessary.[1] Personnel who compound sterile preparations should

- participate in appropriate education and competency verification activities;
- mix no more than three commercially prepared packages of nonhazardous products;
- access a bag or vial of sterile solution or an administration container no more than twice;
- perform proper hand hygiene before and during the compounding process;
- disinfect the compounding surface before beginning the process;
- use aseptic technique;
- use dispensing equipment or a sterile syringe;
- verify medication amount, concentration, and beyond-use and expiration dates; and
- visually inspect the compounded medication to determine if particulate matter is present.[12]

In the OR, personnel should label compounded medication that will not be administered immediately or completely.[1] Such labels should include patient identification information, ingredient names and amounts, identification (eg, name, initials) of the individual who compounded the medication, the current date, and the beyond-use date and time. Compounded medications are intended for immediate use, and the OR environment does not meet the air-quality requirements of the pharmacy environment for compounding.[12]

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LABELING

After transferring medications (including solutions and compounds) from the original container, personnel should immediately apply a label that includes the full name of the medication, concentration, and dilution and diluent (if applicable) with approved abbreviations and dose expressions (Figure 1).[1] If there is concern that the medication will expire during the procedure, personnel also should include the beyond-use date and time or expiration date and time on the label.[1]

Because unlabeled medications are unidentifiable, serious adverse events can occur when unlabeled medications are administered during procedures.[16] Labeling medications immediately after transfer from the original container is a risk-reduction activity. When medications and solutions are dispensed onto a sterile field, the scrub person should place a preprinted sterile label on the sterile medication container and verify it with the RN circulator.[1] Preprinted labels can help reduce errors associated with illegible handwriting and standardize the labeling process. Personnel should discard any unlabeled medication immediately.[1]

HAZARDOUS MEDICATIONS

When preparing, administering, and disposing of hazardous medications, personnel can be exposed to dangerous levels of the chemicals in these products and may experience serious side effects, such as cancer, infertility, and genetic damage.[17] As a regulatory requirement,[1] health care organization leaders must create a hazard communication program that addresses hazardous medications[18] to mitigate risks and provide handling instructions. A hazardous medication safety plan should include

- a list of all hazardous medications used in the facility;
- safe handling methods for hazardous medications;
- education and competency requirements according to role;
- specific types of personal protective equipment (PPE) to be worn and the roles and tasks that require it;
- waste-handling and -disposal processes;
- procedures for testing environmental surfaces;
- procedures for deactivating, decontaminating, and cleaning; and
- procedures for emergencies and medical surveillance.[1]

Organization leaders should designate an individual who possesses the appropriate knowledge and understanding of hazardous medications to develop and implement appropriate procedures associated with their preparation, administration, and disposal.[1] This individual's responsibilities also should include ensuring clinician competency; monitoring compliance with applicable standards, laws, and regulations; and maintaining appropriate testing records and following up when needed.[19]

Perioperative leaders should assign personnel who have self-identified as breastfeeding, actively pregnant, or attempting to conceive to a working role that does not require possible contact with hazardous medications.[1] Results of a retrospective study on the relationship between occupational exposures and pregnancy outcomes showed that participants who were exposed to antineoplastic medications had a higher risk of spontaneous abortion (odds ratio = 2.13, 95% confidence interval = 1.39 to 3.27) than participants with other occupational exposures (eg, anesthetic gases, sterilizing agents).[20]

AORN recommends that personnel handle hazardous medications according to applicable regulations, manufacturers' IFU (including the package inserts), safety data sheets (SDSs), and national guidelines.[1] To protect personnel from exposure to hazardous medications, employers must provide appropriate PPE[21] and information on the possible hazards that require PPE.[18]



Figure 1. A properly labeled syringe with local anesthetic on the sterile field.

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To better understand the potential mechanisms of health care workers' exposure to antineoplastic medications, researchers in Canada sent eligible participants a questionnaire regarding their exposures (eg, mode of contact, duration, frequency).[22] Eighteen (15%) of the 120 study participants indicated that they had been exposed to antineoplastic medications when working. Participants described the contributing causes associated with the exposures, and inadequate controls (eg, lack of PPE) was a common theme. The researchers believed that the occupational exposures were preventable.[22]

Personal Protective Equipment

The USP[19] and Oncology Nursing Society[23] recommend use of at least an N95 respirator because of the risk of exposure to aerosolized hazardous medications during handling. However, a study on procedures involving hyperthermic intrathoracic chemotherapy (HITOC)[24] and pressurized intraperitoneal aerosol chemotherapy (PIPAC) techniques[25] found that the risk of air contamination during these procedures was low.

When selecting masks or respiratory protection (eg, surgical N95), perioperative nurses should consider the facility's hazardous medication safety plan, procedure being performed, method of medication administration, and perceived exposure risk.[1] They should a wear a powered air-purifying respirator or a chemical cartridge-type respirator that covers the entire face for known or suspected airborne exposure to gases and vapors from the hazardous medication[1] (eg, cleaning a large spill that cannot be contained with a spill kit[19]).

As a regulatory requirement,[1] personnel must wear eye and face protection when there is a known risk for spray, splatter, or splash of hazardous medications[26] rather than either eye protection or a face shield alone. The combination of a face shield and goggles is important because neither device alone provides adequate protection of both the face and the eyes.[19]

When contact with contaminated items (ie, hazardous medications) is expected, personnel should wear a disposable gown that provides the most effective liquid-barrier protection; these gowns should be sterile for scrubbed team members.[1] Level 4 gowns provide the most protection and can resist liquid and viral penetration; however, no testing has been done to determine their permeability to chemotherapeutic agents.[27] Personnel should change gowns that may be contaminated with hazardous medications according to the manufacturer's IFU.[1] If the manufacturer does not provide recommendations, personnel should change gowns after each use, immediately after contact with the medication (eg, splash), before leaving the area where potential contamination occurred, and every two to three hours.[1]

When performing tasks that may result in contamination with hazardous medication, personnel should wear two pairs of powder-free chemotherapy gloves that meet the applicable standards for that medication.[1] Personnel should check the gloves for defects before use; they also should change them every 30 minutes (or as indicated in the manufacturer's IFU) and whenever they become damaged or contaminated. When handling sterile items, gloves should be sterile.

When performing tasks that may result in contamination with hazardous medication, personnel should wear two pairs of powder-free chemotherapy gloves that meet the applicable standards for that medication.

Personnel should remove PPE used during the handling of or potential contact with hazardous medications before performing any other task (eg, documentation, handling nonhazardous items).[1] After removal, they should dispose of used PPE according to the facility's policies and applicable federal, state, and local regulations. Personal protective equipment is considered contaminated after handling (or potentially contacting) hazardous medication and "should be disposed of in the proper waste container,"[19(p86)] such as a yellow trace chemotherapy waste container (Figure 2). Personnel should then wash their hands with soap and water before resuming activities that do not involve hazardous medications.[1] Wearing potentially contaminated PPE when touching or handling work surfaces or patient care items may cause unintentional exposure to the hazardous medication.

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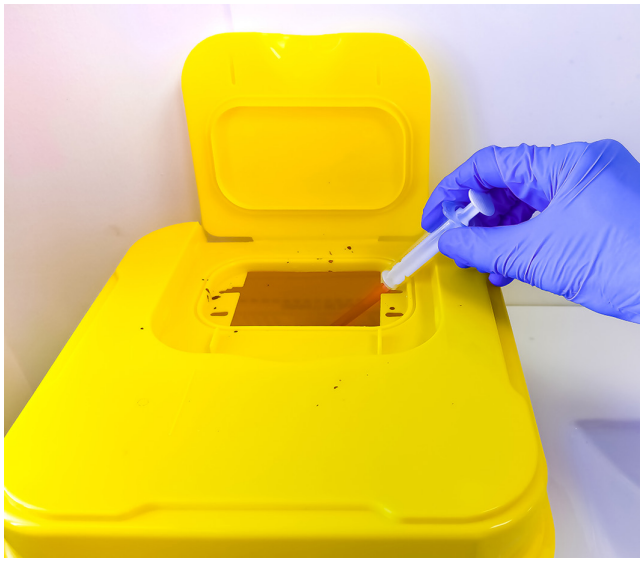


Figure 2. Contaminated syringe disposal in a yellow trace chemotherapy waste container. *Image by Javier Lopez Aguilar via iStock/Getty Images Plus.*

Considerations for Instruments and the Environment

When a patient requires a hazardous medication during a procedure and there is a possibility of a medication leak or spill or excretion, personnel should protect the bed and bed linens with a disposable linen and impervious absorbent pads.[1] Disposable linen and absorbent pads protect the bed and avoid the need to decontaminate and clean contaminated items that may expose personnel to hazardous medications. Personnel should consider reusable linens and the environments they touch to be contaminated.[1]

Researchers in Canada examined pharmacies and patient care areas in 25 hospitals for environmental contamination from hazardous medications.[28] Of the six environmental sampling sites in patient care areas, the three sites with the highest number of samples contaminated with cyclophosphamide were the exterior surface of a hazardous medication container (15 positive samples), an armrest (12 positive samples), and a counter used for priming and validation (12 positive samples). The median concentration of cyclophosphamide in these three areas exceeded the limit of detection. The researchers concluded that using PPE, monitoring the environment of care, and adhering to relevant policies were required to reduce contamination.[28]

When administering hazardous medications intraoperatively, perioperative personnel should use single-use instruments to help prevent unnecessary exposure among personnel and eliminate the need to implement special deactivation and decontamination protocols that may harm the instrument.[1] An interdisciplinary team comprising the hazardous medication safety plan leader and representatives from the pharmacy, nursing, occupational health, quality and risk management, environmental services, and sterile processing departments should collaborate with perioperative personnel to determine the methods for deactivating, cleaning, and decontaminating reusable instruments, devices, and environmental surfaces that may become contaminated with hazardous medications.

When determining the appropriate processes for deactivating, cleaning, and decontaminating contaminated items, the team should consider the medication and chemical manufacturers' IFU as well as the instrument, device, or surface manufacturer's IFU, along with applicable SDSs and the facility's policy and procedure.[1] Perioperative personnel should avoid using an aerosolized point-of-use pretreatment solution on instruments potentially contaminated with a hazardous medication because the solution may cause medication residue to aerosolize. Perioperative personnel also should collaborate with an interdisciplinary team comprising nurses, surgical technologists, and sterile processing personnel to determine safe methods for labeling, transporting, and communicating information about instruments that may be contaminated with hazardous medications.[1]

Administration of hyperthermic intraperitoneal chemotherapy (HIPEC), HITOC, and PIPAC may require additional safety precautions during and after the procedures—these are detailed in the medication safety guideline.[1] Aerosolization precautions are not needed for HIPEC and HITOC procedures because the medication administration does not involve aerosolization. Conversely, splashing is not a concern during PIPAC procedures because the medication is administered via syringe rather than solution bag. AORN provides a conditional recommendation for additional precautions for handling and administering hazardous medications during and after HIPEC or HITOC procedures, including

- designating a specific OR for these procedures,
- using a smoke evacuator to capture medication vapor, and
- allowing for increased OR cleaning time after these procedures.[1]

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In addition, scrubbed personnel may wear a nonsterile, disposable, fluid-resistant hood during these procedures. To prevent cross-contamination, cleaning personnel may change their outer gloves and cleaning supplies when they move from one area of the OR to another.[1]

SCENARIO

Stephanie has been an RN circulator at large metropolitan academic medical center for two years. One morning when she arrives at the hospital and checks her assignment, she sees that she is assigned to work with Dr B, a urologist, who will perform a transurethral resection of a bladder tumor with intravesical therapy (ie, instillation of an antineoplastic medication into the bladder) during the first procedure of the day. Stephanie's primary team is plastics, but she worked as the RN circulator for this type of procedure approximately six weeks ago. Although she is still unfamiliar with the required steps for administering the medication, she knows that there will be an order for it and that it will require special handling. Stephanie finds Kamilah, the urology team leader, to discuss her concerns and request support for the procedure.

After listening to Stephanie's concerns, Kamilah decides to assist her with the RN circulator responsibilities. She tells Stephanie that the surgeon usually orders the required medication from the pharmacy a few days before the procedure to ensure its availability. Stephanie accesses the patient's electronic health record to find the specific antineoplastic medication ordered. She then calls the pharmacy and confirms that the medication has been prepared; she is told that a pharmacist will bring it to the OR before the procedure begins.

After relaying the status of the medication order to Kamilah, Stephanie asks about required PPE and methods to manage any potentially hazardous waste in the OR. Kamilah suggests that Stephanie review the hazardous medication safety plan and the SDS for this medication for specific instructions. While reading, Stephanie learns that all personnel who handle the antineoplastic medication require double chemotherapy-specific gloves, goggles, a face shield, a surgical mask, and a Level 4 gown specific to the individual's role (ie, sterile gown for scrubbed team members). She also notes that the contaminated hazardous waste should be placed in a yellow trace chemotherapy waste container for disposal.

Resources for Implementation

AORN publishes a variety of resources (eg, competency verification tools, sample policies and procedures, gap analysis tools) to assist perioperative nurses and leaders implement guidelines. These implementation tools are available to AORN members through the Guideline *Essentials*. Members and nonmembers may have access to the same guideline implementation tools through a subscription to AORN eGuidelines+.

Guideline *Essentials*: Medication Safety. AORN. Accessed July 18, 2023. *https://www.aorn.org/guidelines-resources/guidelines-for-perioperative-practice/guideline-essentials/medication-safety* [membership required]

As she is reviewing the facility's hazardous medication safety plan, Stephanie learns that one of the potential hazards of handling this medication is chromosomal damage and birth defects—pregnant personnel should not be exposed to this medication. Immediately, Stephanie mentions to Kamilah that she believes she heard Amie, the surgical technologist who is assigned to the procedure, openly discussing that she is pregnant. Kamilah thanks Stephanie for the information, privately meets with Amie, and then collaborates with the charge nurse to change Amie's assignment.

As Stephanie prepares the OR, Kamilah reminds her to place disposable linen and absorbent pads on the OR bed because of the risk for spillage and excretion. Stephanie also confirms that all required PPE is readily available and at least one yellow trace chemotherapy waste container is in the OR. They finish the OR preparations and confirm that the surgical technologist is wearing appropriate PPE and has no needs. Stephanie and Kamilah leave the OR for the charge nurse's desk and meet the pharmacist, who has the antineoplastic medication in a sealed, clearly marked container affixed with a yellow label and the biohazard symbol. The pharmacist provides a hand-over report (eg, patient identification, medication information, PPE requirements) for the antineoplastic medication before passing the sealed container to Kamilah.

Kamilah returns to the OR with the medication while Stephanie goes to the preoperative area to interview the patient, Mx L. Stephanie confirms that all items on the

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preoperative checklist are complete before transporting Mx L to the OR and assisting them onto the bed. The anesthesia professional places the required monitors and induces general anesthesia. Kamilah, Stephanie, and Dr B then place Mx L in the lithotomy position. Stephanie performs patient skin antisepsis, Dr B drapes, and the team performs the time out before incision.

There are no unplanned events during the procedure, and near the end, Dr B requests the antineoplastic medication. Stephanie dons appropriate PPE and Dr B, who is already wearing a Level 4 gown, goggles, and face shield, dons two pairs of chemotherapy gloves. Stephanie double-checks the medication with Dr B; and he then inserts a two-way catheter, instills the antineoplastic medication, and clamps the catheter. The surgical team completes all end-of-procedure activities (eg, counting, securing the catheter) and then moves Mx L from the OR bed to a hospital bed that is covered with a disposable absorbent pad before removing their PPE. After reversal of general anesthesia, Stephanie and the anesthesia professional transport Mx L to the postanesthesia care unit.

Stephanie provides a hand-over report to the postanesthesia care unit nurse; she includes information on the antineoplastic medication and reminders from the hazardous medication policy (eg, PPE, how to manage excreta). Stephanie then returns to the OR to assist with the room turnover. She immediately discovers that the used surgical gowns and gloves were discarded into the regular waste container rather than the yellow container for trace chemotherapy waste. Stephanie dons appropriate PPE to transfer the inappropriately placed waste to the yellow waste container. She helps finish the room turnover before preparing for the next procedure.

CONCLUSION

Perioperative medication management is complex, and errors can occur at any stage. An interdisciplinary team should provide oversight and standardization of medication practices in health care organizations. Compounded medications should be obtained from either the manufacturer or an FDA-registered outsourcing facility, and compounding in the OR should only occur when there are no other alternatives available. When transferring medications from the original container and not administering them immediately, personnel should properly label the container. To prevent incidental exposure to hazardous medications, such as those used to treat cancer, personnel should handle, administer, and dispose of the medication according to the manufacturer's IFU. This may involve wearing additional types of PPE (eg, face shield and goggles, two pairs of chemotherapy gloves).



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Contact hours are available for this activity. Earn the contact hours by reading this article, reviewing the outcome and objectives, and completing the Learner Evaluation at *https://aorn.us/dec23-cea*.

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Jennifer Speth, MSN, RN, CNOR, is a perioperative education specialist at AORN, Inc, Denver, CO. *Ms Speth has no declared affiliation that could be perceived as posing a potential conflict of interest in the publication of this article.*

Correspondence: *jspeth@aorn.org*.

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