Safe Medication Management at Ambulatory Surgery Centers

PODCAST

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ABSTRACT

Safe medication management is an important aspect of preventing patient harm. Medication management in the ambulatory setting can be complicated because of state and federal regulations and requirements imposed by accrediting organizations. Ambulatory surgery center leaders should review their medication management programs internally to assess their comprehensiveness in terms of efficiency, meeting regulatory requirements, and keeping patients safe. Partnering with a pharmacist or pharmacy consultant can be a useful way to address challenges with proper medication management. Perioperative medication use and administration, postoperative pain management, medication disposal, staff member and physician education, proper documentation in the medical record by all disciplines, pharmacoeconomics, pharmacy compounding needs, and controlled medication management and oversight are all important components of this segment of care. Ensuring that medication management programs at ambulatory surgery centers meet all regulatory and patient safety requirements is essential.

Key words: *medication management*, *ambulatory surgery center*, *pharmacy consultant*, *postoperative pain*, *pharmacoeconomics*.

Investigators have questioned whether the patient care that ambulatory surgery centers (ASCs) provide is less safe than the patient care provided by hospitals.[1,2] It is therefore essential that ASCs ensure the highest standard of care by implementing the most up-to-date, evidence-based care and safety measures possible. In 1996, the Institute for Medical Quality (IMQ) in California enacted requirements to protect patients undergoing operative and other invasive procedures in an outpatient setting. These statutes require that ASCs using anesthesia that may cause loss of life-preserving protective reflexes must be licensed by the state or certified by an accrediting organization for Medicare reimbursement.[3] Even before the existence of the IMQ, most states had regulations that ASCs were obligated to follow to be licensed. In addition to meeting Centers for Medicare & Medicaid Services requirements for reimbursement, many ASCs are accredited by other accrediting bodies, including The Joint Commission, American Association for Accreditation of Ambulatory Surgery Facilities, Accreditation Association of Ambulatory Health Care, Healthcare Facilities Accreditation Program, or the IMQ.[4] These organizations aim to ensure an acceptable level of quality and safety is maintained at each facility.

One of the most important safety concerns for any ASC is medication management. The safe management of medications is a multifaceted and difficult undertaking that includes

- obtaining an accurate list of medications that the patient takes on a regular basis;
- monitoring preoperative, intraoperative, and postoperative medication use and administration;
- providing patients with responsible methods of postoperative pain management at home after surgery;
- administering and disposing of medications properly;
- educating staff members and physicians;
- documenting medications properly in the medical record across all disciplines;

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- managing pharmacoeconomics;
- anticipating pharmacy compounding needs; and
- managing and overseeing controlled medications.

All of these tasks are an integral part of this important segment of patient care and need to be implemented and evaluated frequently.

DEVELOPING A MEDICATION MANAGEMENT PROGRAM

Ambulatory surgery centers are unique environments that require medication use and acquisition processes that are different from traditional methods used in hospitals on an inpatient unit or in an inpatient OR. The outpatient setting requires a unique approach to medication management for all staff members, including physicians and anesthesia professionals. Although multiple resources and guidelines are available to help ASCs align with best practices, it is difficult for them to stay up-to-date with changing recommendations and regulations. Resources available include the American Society of Health-System Pharmacists' *ASHP Guidelines on Surgery and Anesthesiology Pharmaceutical Services*,[5] the Anesthesia Quality Institute, the Surgical Quality Alliance, the Anesthesia Patient Safety Foundation, and AORN.[6,7]

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Some ASCs work with a pharmacy consultant (ie, pharmacist from outside the organization) to help with medication management. This can be an economical way to alleviate any medication management concerns that ASC personnel may have, especially when they do not have the bandwidth to keep up with new regulations. If the center has the capability to enter into a contract with a consultant, the language of the contract should include the terms of the contract, the number of visits the consultant will make to the surgery center, the consultant's availability in addition to ASC visits, the amount of education the consultant will provide to staff members and facility managers, anticipated material expenses (eg, signage for medications, policy documents), and whether the consultant will include a written evaluation of ASC visits and assistance during regulatory surveys. If a center is unable to align itself with this type of consultant, it can use other means to evaluate and maintain proper management of medications. For facilities that are partnered with hospitals, the ASC could consider collaborating with the hospital pharmacy to obtain the same type of services that a pharmacy consultant might provide. Ambulatory surgery centers that are not affiliated with a hospital and are not able to partner with a consultant can use other available resources, such as the AORN "Guideline for medication safety"[7] and the World Health Organization web site on education materials for medication safety.[8] Developing a medication management system should include

- implementing a process that allows providers to perform preoperative medication assessments,
- educating ASC personnel,
- reviewing records for proper medication documentation,
- tracking controlled medications,
- addressing postoperative pain responsibly,
- obtaining compounded medications, and
- minimizing medication costs.

Preoperative Medication Assessment

Obtaining an accurate health history from the patient preoperatively is one of the crucial elements of safe medication practices. It is essential for a health care provider to obtain a complete list of the patient's medications, including over-the-counter medications, vitamins, supplements, and natural therapies, before the day of surgery.[9] This information assists providers in understanding the patient's medical conditions and helps to avoid medication interactions between what patients take at home and what is administered to them at the ASC. In addition, there are some medications that patients may need to discontinue before surgery for a specified period of time (eg, anticoagulants to avoid excessive bleeding during the procedure). Ambulatory surgery centers typically rely on the surgeon or staff members from the surgeon's office to provide instructions to the patient about this practice. However, these recommendations are not standardized because evidence regarding which medications are safe to continue and which medications should be discontinued is lacking. According to one article on perioperative medication management,

> *A good medication history that includes herbal and [over-the-counter] products is essential for safe induction of anesthesia and optimization of outcomes during and following surgery. In general, medications with the potential to induce withdrawal symptoms should be continued. The use of nonessential medications that can increase surgical risk should be discontinued. If neither of these conditions applies, consider the patient's risk profile and the risk of the procedure when making perioperative management decisions. Be mindful of withdrawal syndromes and resume medications with the potential for such syndromes as soon as possible.*[9(pS130)]

A contracted pharmacy consultant, internal pharmacist, or anesthesia professional at the ASC can provide additional guidance on which medications the patient should discontinue and which medications the patient should continue before surgery. However, this only can occur if the patient's health history and medication regimen are known before the surgery date.

On the day of surgery, the preoperative RN should verify the list of home medications with the patient and, if applicable, confirm which medications the patient discontinued and when they were last taken. He or she also should confirm the patient's allergies.[7] The preoperative RN should share this information with the RN circulator during the hand over before the RN circulator brings the patient to the OR. The surgical team can provide safer care when they are cognizant of a patient's recent medication history.

Educating Staff Members, Physicians, and Anesthesia Professionals

Medication management requires educating staff members, physicians, and anesthesia professionals about proper medication selection, administration, documentation, and disposal. If an ASC uses a pharmacy consultant, the consultant's educational services should be individualized based on the facility's needs. All printed education materials should be specific to the ASC and should not include generic information that does not apply to that particular facility. Either a consultant or a staff member can use a safe medication audit tool while observing personnel administering medications. It is important for the observer to provide real-time feedback to staff members and physicians who are not administering medications correctly. If a staff member, such as a nurse, is conducting the audit, he or she may not feel comfortable providing this feedback to a physician. Therefore, it may be helpful to have the medical director or the facility's infection prevention nurse observe medication administrations and explain the proper technique during the observation.

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The facility should create checklists for the contents of emergency carts (eg, code cart, malignant hyperthermia cart) and anesthesia carts to ensure that they are stocked with the correct medications to handle any type of emergency that may arise. Staff members should check the carts frequently for expired medications that need to be replaced. Checklists not only track the contents of carts, but also help familiarize staff members with the medications stocked in the carts. An anesthesia professional at the facility can conduct educational drills, such as mock codes, for staff members to review proper medication administration for emergencies. A staff member who is not partaking in the drill should observe the drill and determine what continuing education needs that the facility may have. The emergency cart checks and the mock code drills should be conducted at specific intervals throughout the year and as frequently as necessary for staff members to feel comfortable.

Medication Documentation

Reviewing patient records is important to ensure that medications are being administered and documented appropriately for both patient safety purposes and regulatory compliance. If the facility does not have a pharmacy consultant available, it is comparable to have a nurse review the documentation. Many accrediting bodies have their own documentation worksheets available for purchase that ASC personnel may use for documentation review. If the ASC does not use electronic documentation, the reviewer should check the medical records for clarity and legibility on all medication-related entries

because paper records may be more difficult to decipher than electronic medical records. The reviewer should reconcile the anesthesia professional's documentation of controlled medications and make sure that it is appropriately tied to the controlled medication administration record. The reviewer also should verify that the medication dosing is appropriate for the type of procedure, which may require the assistance of a pharmacy consultant, a hospital pharmacist, or the anesthesia professional at the ASC. Although there is a Centers for Medicare & Medicaid Services proposal to remove antibiotic administration timing requirements,[10] the reviewer should continue to monitor antibiotic administration time in relation to incision time. It also is important to review documentation of patients' allergies and any correlation with the medications administered; documentation of any medication reactions; and use of dangerous abbreviations, such as those included on The Joint Commission's "Do Not Use" list.[11]

Appropriate disposal of medications is becoming increasingly complicated. There are requirements for the disposal of certain types of medications and methods that render them unusable after disposal. These regulations can vary from state to state. The pharmacy consultant, facility pharmacist, or US Department of Justice Drug Enforcement Administration (DEA) can provide guidance on how to achieve compliance with medication disposal regulations.[12] Providers should document appropriate wasting of controlled medications and a witness should cosign the document.

Management of Controlled Medications

The management and oversight of controlled medications presents some unique challenges in ASCs compared with hospitals. Ambulatory surgery centers that are affiliated with a hospital system may have the luxury of a medication dispensing system (ie, an electronic device that securely stores and dispenses medications). However, the cost of buying and maintaining a controlled medication dispensing system is prohibitive to many surgery centers. If there is no pharmacy, the ASC will likely need to have a staff member stock and lock up controlled medications and may need to resort to more conventional methods of documenting these transactions, such as using logs and manually counting on a periodic basis throughout the day. It is essential that the pharmacy consultant or ASC administrator observe and evaluate the center's methods of accounting for controlled medications to ensure that they meet regulatory requirements.

According to Sheldon Sones, RPh, Fellow of the American Society of Consultant Pharmacists (FASCP), a pharmacy consultant,

> *Knowledge about local, state, and federal Drug Enforcement Administration regulations and laws are important for the facility to evaluate when customizing systems that minimize this risk of diversion and, at the same time, provide ease of resolution and identification when a deviation is identified* (written communication, August 15, 2018).

The facility should audit the medical records and the narcotics logs to look for any instances of diversion. If diversion is suspected, the appropriate ASC administrator or nurse leader should collect evidence to support the diversion and notify the DEA. The DEA can be helpful in guiding facilities on how to handle this process if diversion is suspected.

Postoperative Pain Management

Postoperative pain management immediately after a procedure and after the patient is discharged has become more challenging because outpatient surgery is more common and patients are presenting with more complicated health histories and comorbidities than ever before. Ambulatory surgery center leaders can partner with surgeons, anesthesia professionals, and a pharmacy consultant or facility pharmacist to develop a plan to handle challenging patients in an effort to minimize pain during the postoperative period and limit the number of emergency department visits related to unmanaged pain.

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Ambulatory surgery centers have an obligation to assist with the prevention of opioid dependence or abuse. According to the National Institutes of Health,

> *More than 2 million Americans have [opioid use disorders]. Millions more misuse opioids, taking opioid medications longer or in higher doses than prescribed. ... [National Institutes of Health] will support research to provide new strategies for the prevention and treatment of opioid misuse and addiction, that will help people with OUD achieve and maintain a meaningful and sustained recovery.*[13]

Providers at ASCs have a responsibility to provide appropriate postoperative pain management that addresses the patient's pain but minimizes the possibility of opioid misuse or abuse. State laws that mandate electronic prescriptions make it difficult for ASC providers to know what type of medication and the amount of medication the patient has already been prescribed for postoperative pain management. Physicians and nurse practitioners typically order these prescriptions during the patient's preoperative visit, and ASC providers usually are not privy to this information. The facility needs to develop effective strategies for obtaining this information to ensure that there is proper management of postoperative pain medications and that opioid medication is not being overprescribed. This need may require the ASC to collaborate with each physician's office to determine the most efficient way to obtain this information. A nurse leader, administrator, anesthesia professional, or pharmacy consultant should review the quantity of opioids prescribed to ensure that it does not exceed the amount that is considered the standard of care or allowed by state regulations. Prescribers can use the Affirm Health web site to find opioid-prescribing guidelines by state.[14] It is important that each ASC work to develop multimodal approaches to treating postoperative pain that do not include opioid prescriptions when possible.

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Use of Compounded Medications

Most ASCs do not have pharmacy hoods for compounding medications because they are expensive and there are stringent regulatory requirements for their use. These barriers make it challenging for ASCs to provide medications that require compounding. In 2012, a contamination incident in Massachusetts led to stricter standards for compounding pharmacies. Sixty-four patients died and others became sick from fungal meningitis–contaminated steroids; subsequently, the Massachusetts state legislation developed new regulations to prevent similar incidents from occurring.[15] Personnel can use the US Food and Drug Administration web site to find reputable compounding pharmacies and a list of accreditation survey outcomes for those compounding pharmacies that dispense non–patient-specific products (ie, 503-B compounding pharmacies).[16] Acquiring medications from a compounding pharmacy is expensive, so it is important that ASC leaders take costs into consideration when choosing a vendor for these medications.

Pharmacoeconomics

Pharmacoeconomics is a "branch of economics that uses cost-benefit, cost-effectiveness, cost-minimization, cost-of-illness and cost-utility analyses to compare pharmaceutical products and treatment strategies."[17(p34)] According to Sheldon Sones,

> *The landscape of drug acquisition/supply chain has changed significantly in recent years. While heretofore many facilities engaged a single preferred wholesaler, the chronic and never-ending national drug shortages have exacerbated sometimes daily challenges to maintain adequate drug supply of routine and emergency drugs* (written communication, August 15, 2018).

Pharmacy consultants, pharmacists, anesthesia professionals, and medication vendors can all play a key role in ensuring supply chain adequacy. They should compare prices for medications that are difficult to obtain and educate facility staff members about how to handle medication use in times of medication shortages.

Ambulatory surgery centers that are not affiliated with a larger health care institution do not have the buying power of hospitals and health systems; thus, acquiring important emergency medications or even IV fluids can be challenging. Group purchasing organizations can assist ASCs with gaining buying power and finding better pricing.

Key Takeaways

- One of the most important safety concerns for ambulatory surgery centers is medication management. Ambulatory surgery centers are unique environments that require medication use and acquisition processes that are different from traditional methods used in hospitals on an inpatient unit or in an inpatient OR.
- The safe management of medications is a multifaceted and difficult undertaking. Although multiple resources and guidelines are available to help align surgery centers with best practices, it is difficult for them to stay up-to-date with changing recommendations and regulations.
- Medication management includes ensuring that providers have knowledge of patients' medication histories and prescriptions; educating staff members and physicians on proper medication administration; reviewing medication documentation; ordering, supplying, storing, and disposing of medications properly; creating strategies for postoperative pain management; tracking controlled medications; and considering pharmacoeconomics.
- It may be useful for ambulatory surgery centers to contract with a pharmacy consultant or work with a hospital pharmacist, if available, to review their medication management program. Periodic evaluation of the program is crucial to maintaining regulatory compliance and providing safe patient care.

Medication shortages and expenses affect ASCs tremendously and can force centers to develop processes for handling medications that may not meet regulations set by governing bodies. Ambulatory surgery centers that have difficulty obtaining replacement medications for those that have expired because of medication shortages should reach out to regulatory agencies to assist with developing a plan for handling these medications (eg, using alternate medications). Consultants or hospital pharmacists can draw from their experiences with medication management to develop a plan that will not interfere with patient safety. An anesthesia professional also can make suggestions for alternatives to emergency management medications. A surgery center may want to create a log for the medications that are difficult to obtain and keep it updated with information on who has been contacted to obtain the medications and the frequency of these attempts. This log may not prevent a citation if the facility is not abiding by regulations because of a medication shortage; however, it will show that efforts have been made to obtain the medication. A medication shortage also may require the facility to use multidose vials for multiple patients. According to the Centers for Disease Control and Prevention,

> *If multi-dose vials must be used for more than one patient, they should only be kept and accessed in a dedicated medication preparation area (e.g., nurses station), away from immediate patient treatment areas. This is to prevent inadvertent contamination of the vial through direct or indirect contact with potentially contaminated surfaces or equipment that could then lead to infections in subsequent patients. If a multi-dose vial enters an immediate patient treatment area, it should be dedicated for single-patient use only.*[18]

Despite medication shortages, the Centers for Disease Control and Prevention recommends that single-dose vials are only used on one patient and for one dose.[19]

EVALUATION OF A MEDICATION MANAGEMENT PROGRAM

Regulations at the state level and with all regulatory agencies change frequently, requiring ASCs to change how they handle medication administration and management. Ambulatory surgery center administrators should conduct a review of policies and procedures at least annually to ensure that new regulations are addressed and that the center is compliant. Whether the facility has a pharmacy consultant or the facility is conducting their own evaluation of the medication management program, it is good practice to generate a report of the findings. This report should include evaluation of center-specific issues, a comparison of the ASC's performance with benchmarks for specific indicators, and action items to address before the next evaluation. Benchmarks such as antibiotic timing, pain

management, and medication reconciliation compliance are all specific indicators for ambulatory surgery. These benchmarks also can serve as potential quality improvement projects for each facility if results are poor for a particular indicator. If a pharmacy consultant is not available to assist with benchmarking, personnel may obtain benchmarks from the Ambulatory Surgery Center Association[20] and Becker's ASC Review or Becker's Hospital Review.[21]

For a medication management evaluation report to have maximum benefit to the ASC, leaders should share the report with staff members and physicians during staff meetings, medical advisory meetings, and governing board meetings; and the transcriptionist should record the report results in the meeting minutes. The executive committee and governing board for the ASC should review this report before the next program evaluation to verify that all deficiencies that were identified in the report have been addressed and are not resurfacing. Sheldon Sones states, "It is suggested that the report be in a format that identifies the finding, then makes a recommendation for resolution, and then allows for the facility to respond in writing before the next visit" (written communication, August 15, 2018).

CONCLUSION

Safe medication management is one of the most important patient safety initiatives at an ASC. Ambulatory surgery center leaders should require a comprehensive review of their medication management program on a periodic basis. Medication management is a complicated and multifaceted segment for a surgery center and requires the knowledge and expertise of nursing leaders to ensure that the program is successful. Pharmacy consultants and hospital system pharmacists affiliated with the ASC are excellent resources. However, ASCs that do not have access to either resource can procure a safe medication management program by using the outside resources that are available to them.

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