HealthcareSource Contingent Talent Management℠

Medication Safety Nursing

Core Competency Inservice

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Introduction

For any nurse working in a direct care setting, preparing medications and administering them to patients is part of the daily routine. Mistakes can happen at any point in the process. Administration errors are one of the most serious and most common mistakes made by nurses. The result may lengthen a hospital stay, increase costs, or have life and death implications for the patient. So, what can you do to safely administer medications?

Start with the basics

- Verify any medication order and make sure it's complete. The order should include the drug name, dosage, frequency and route of administration. If any element is missing, check with the practitioner.
- Check the patient's medical record for an allergy or contraindication to the prescribed medication. If an allergy or contraindications exist, don't administer the medication and notify the practitioner.
- Prepare medications for one patient at a time.
- Educate patients about their medications. Encourage them to speak up if something seems amiss.
- Follow the eight rights of medication administration.

Minimize distractions and interruptions

- Know that interruptions and distractions have a marked effect on your performance, causing a lack of attention, forgetfulness, and errors.
- Make sure you have all the required supplies and documents available before beginning preparation or administration activities.
- Follow your facility's policy related to the use of a "No Interruption Zone" (NIZ), a practice recommended by the Institute for Safe Medication Practices (ISMP) to enhance patient safety. Your NIZ should be a discreet area where medication tasks are performed. It may be a dedicated medication room, or a quiet area sectioned off by visual markers.
- If required by your facility, wear a special vest, apron, sash, lighted lanyard, or other item that indicates that you are administering medications and shouldn't be interrupted.
- If your facility utilizes mobile devices, temporarily transfer calls and other notifications to another staff member or place the device on pause during the most complex parts of the medication preparation and administration tasks.

Implement these additional safety measures:

- Be especially alert during high-risk situations, such as when you are stressed, tired, or angry or when supervising inexperienced personnel. Monitor and modify work schedules to minimize work- or fatigue-related medication errors.
- Be familiar with all appropriate antidotes, reversal agents, and rescue agents. Know where they are stored on your unit and how to administer them in an emergency situation.
- Be familiar with high-alert medication (such as anticoagulants, antidiabetic agents, sedatives, and chemotherapeutic drugs). Ask another nurse to perform an independent double check and rectify any discrepancies BEFORE administering the drug.
- Be aware of your facility's list of confused drug names, which includes sound-alike (such as Zocor and Cozaar) and look-alike (such as vinblastine and vincristine) name pairs. Take extra precautions when

administering drugs from these lists. Your facility may also have extra safeguards in place, such as requiring both the brand and generic name be recorded, including the purpose of the medication with all orders, or setting up computer selection screens to prevent look-alike names from appearing near each other.

- Pay attention to Tall Man lettering, a visual safety feature that highlights a section of a drug's name using capital letters to help distinguish look alike name pairs from each other, such as BuPROPion (an antidepressant) from BusPIRone (an anxiolytic) or glipiZIDE from glyBURIDE (two different antidiabetics).
- Measure and document a patient's weight in metric units (grams and kilograms) ONLY to allow for accurate dosage calculations. Also, weigh the patient as soon as possible on admission and don't rely on stated, estimated, or historical weights.
- For patients receiving IV opioid medication, frequently monitor respiratory rate, sedation level, and oxygen saturation level or exhaled carbon dioxide to decrease the risk of adverse reactions associated with IV opioid use. If adverse reactions occur, respond promptly to prevent treatment delays.
- Administer high-alert intravenous medication infusions via a programmable infusion device utilizing dose error-reduction software.
- Reconcile the patient's medications at each care transition and when a new medication is ordered to reduce the risk for medication errors, including omissions, duplications, dosing errors, and drug interactions.
- Educate and provide written instructions to the patient and family (or caregiver) regarding prescribed medications for use when at home and verify their understanding prior to discharge.

By being familiar with medications you administer and following safeguards, you can help protect your patients from medication errors.

The Eight Rights of Medication Administration

Chances are that some of you may not have known that in addition to the well-known 5 right of medication administration, some experts have added 3 more to the list. When it comes to patient safety, it's never a bad time to review some of the basics and increase your awareness of newer recommendations.

1. Right Patient

- Check the name on the order and the patient
- Use 2 identifiers.
- Ask patient to identify himself/herself.
- When available, use technology (for example, bar-code systems)

2. Right Medication

- Check the medication label
- Check the order

3. Right Dose

- Check the order
- Confirm appropriateness of the dose using a current drug reference

- If necessary, calculate the dose and have another nurse calculate the dose as well

4. Right Route

- Again, check the order and appropriateness of the route ordered
- Confirm that the patient can take or receive the medication by the ordered route

5. Right Time

- Check the frequency of the ordered medication
- Double-check that you are giving the ordered dose at the correct tim
- Confirm when the last dose was given

6. Right Documentation

- Document administration AFTER giving the ordered medication
- Chart the time, route, and any other specific information as necessary. For example, the site of an injection or any laboratory value or vital sign that needed to be checked before giving the drug

7. Right Reason

- Confirm the rationale for the ordered medication. What is the patient's history? Why is he/she taking this medication?
- Revisit the reasons for long-term medication use

8. Right Response

- Make sure that the drug led to the desired effect. If an antihypertensive was given, has his/her blood pressure improved? Does the patient verbalize improvement in depression while on an antidepressant?
- Be sure to document your monitoring of the patient and any other nursing interventions that are applicable

Classification of Narcotics

In 1970, Congress enacted the Comprehensive Drug Abuse Prevention and Control act, which included the Controlled Substances Act (CSA). The CSA established the current classification system used for Purpose Goals narcotics (Schedule I through IV).

Both the Drug Enforcement Administration (DEA) and the Food and Drug Administration (FDA) control the classification of drugs, determining which drugs to add or remove.

The DEA regulates controlled substances. Criteria for classification include an estimation of the potential for abuse, risk to public health, potential for psychic or physiological dependence, as well as the current medical use, and limitations resulting from international treaties. It's important to note that some drug classification systems are not consistent internationally and some drugs (such as heroin) classified as Schedule I in the United States are used medically in other countries.

- Narcotic (opiate) analgesics may be natural, semisynthetic, or synthetic alkaloid derivatives of opium and are classified as opiate agonists and opiate agonist-antagonists.

- Opiate agonists: These include natural opiate agonists (morphine, codeine), semi-synthetic analogs (hydromorphone, oxycodone), and synthetic opioids (meperidine, fentanyl, methadone). They act by binding to opiate receptors in the central nervous system, both interfering with the pain pathway and with the perception of pain.
- Opiate agonist-antagonists: These include pentazocine (Talwin®), nalbuphine HCL (Nubain®), Dezocine (Dalgan®), butorphanol (Stadol®) and buprenorphine (Buprenex®). They act by stimulating some receptor sites and antagonizing (blocking) others, resulting in depression of the CNS and alterations in perception of pain. Controlled substances include those on schedules I through V. The DEA does not regulate substances in Schedule VI although states may regulate these drugs to some degree.
- Opiate antagonists: These include naloxone (Narcan) and nalmefene HCL (Revex). They act by competing with narcotics for receptor sites and blocking the action of opiates. Used to treat overdose, they may induce withdrawal symptoms in those who are dependent.

Narcotic Handling, Storage and Disposal

Schedule II through V drugs must be handled as controlled substances and securely locked (usually with double locks or special locks) in a substantially constructed cabinet. Twenty or thirty years ago, most facilities simply kept stock narcotics in a locked cabinet in a locked medicine room, but storage and delivery of medications have changed—and the number of controlled substances has increased. Now, there are many options, and these vary widely from one facility to another.

Locked Medication Cabinets

- Double-locking cabinets (requiring two keys on one door or two keys for double doors) are still used, especially in smaller facilities, such as long-term care facilities.
- Only authorized personnel are allowed access to the keys, and this type of cabinet is usually contained in a locked room to further limit access.
- Note that this type of cabinet is not refrigerated, so some controlled substances will need to be stored in a securely locked refrigerator or refrigerated cabinet or container.
- Controlled substances are now usually provided in individual dose containers rather than bulk (such as 30 mL vials or 100 tablet bottles).
- With this system, some form of record (written, computerized) is kept each time a drug is removed from the storage cabinet because this system requires a manual narcotics count.
- The usual information recorded when medication is removed includes the date, time, drug, patient for whom the drug is intended (name, ID, room number), the name of the prescriber, and the name of the healthcare provider procuring the drug.
- With this type of storage, the traditional end-of-shift narcotics count with the oncoming nurse counting and the outgoing nurse verifying is usually conducted.

Medicine Carts

- There are many types of medicine carts, but most have individual drawers to hold medications for each patient rather than each drug. Some medicine carts have special more secure drawers to hold controlled substances with a double-locking system.
- Depending on the system, controlled substances may be co-mingled or in separate drawers.
- Refrigerated controlled substances are usually kept in a central area under double-lock in some type of refrigerator or refrigerated container.
- Controlled substances should not be placed in regular medicine drawers, as these drawers are not adequately secure.
- With this system, as with a medicine cabinet, some form of record should be kept each time a drug is dispensed, as a manual narcotics count must be completed.
- Also, if the patient is wearing a transdermal patch, the two nurses completing the Narcotic count should both witness and document that the patch is in place per the MD order.
- Liquid narcotics should be counted at eye level and not appear watered down or change in color and documented on the narcotic record.
- Then end-of-shift count is also conducted with this type of storage, but because the narcotics may be stored in a number of different carts, different pairs of nurses may be conducting counts at the different carts.

Automated Drug Dispensing Systems

- Most hospitals now utilize some type of automated drug dispensing system with computerized access.
- These systems also vary widely although they all have automated record keeping and require user names and passwords (and sometimes barcodes) for access.
- Some automated systems have individual drawers for patients and others individual medicine carts or automated drug dispensing systems drawers for medications, like a mini-pharmacy.
- Because the automated computerized systems automatically maintain an accurate narcotics count, some facilities have eliminated the narcotics count altogether or left it to pharmacy staff. In some facilities, however, periodic manual counts may be done on some routine schedule, such as once a week or once a month.
- The counts may be blind or verifying:
- Blind: Those counting do not see the actual number of doses remaining but do the count and enter the number into the system.
- Verifying: Those counting see the actual number of doses remaining and count to verify that the number is correct. This system is more prone to counting errors than the blind method.

Documentation

When administering a controlled substance, such as a narcotic, to a patient, the purpose of the drug should be clearly documented. For example, if for dyspnea, the patient's condition should be described and the respiratory rate as well as description of skin color and ventilation (rales, wheezing, decreased ventilation).

When administering controlled substances for pain management, the most common reason, documentation should include:

1. Reason for the administration (such as pain in left knee) and the degree of pain, utilizing the appropriate pain scale, such as the 1-10 scale, FACES, CRIES, and Pain Assessment in Advanced Dementia (PAINAD), depending on the patient's age and condition.

2. Patient, medication, dosage, route, time. This information should be recorded immediately after administration and not at a later time or at the end of the shift. In automated systems, this information is recorded when the drugs are removed, so the documentation should be administered promptly so that the recorded time is accurate. If there is a delay between the time the medication is dispensed and given, then the next dose may be given too soon.
3. Response to medication, including description and degree of pain, utilizing the same pain scale. Evaluating the response to the drug should correspond to the onset of action for the individual drug and its peak performance. For example, relief of pain may occur within 5 to 10 minutes for an IV medication but may be delayed for 20 to 30 minutes or longer for oral medications. Some drugs may peak within 1.5 hours, but others may peak in 4 hours.

Disposal of Narcotics

Hospitals and other facilities utilize a range of different methods to dispose of unused or excess narcotics. When controlled substances must be disposed of, the disposal should be witnessed by two healthcare providers who are licensed to dispense drugs, such as two RNs, and the disposal documented with both healthcare providers signing. This should be done immediately after procuring the drug. The nurse should not carry the excess narcotic on a tray or in a pocket or place it in an unsecured medication drawer for later disposal because this increases the risk of diversion or errors in documentation but should immediately ask for a witness and dispose of the drug according to established protocol.

Under no circumstances should a healthcare provider agree to sign for unwitnessed disposal of narcotics. Doing so could make the healthcare provider complicit in diversion or arouse suspicion of unprofessional conduct. For injectables and liquids, the nurse should draw up into the syringe only the amount to be given to the patient and not draw a greater amount, intending to only inject, for example, half of the drug in the syringe because this poses a risk of overdose. Drawing the full amount and wasting part of it prior to administering the drug may result in contamination of the needle (although if syringes are prefilled and a partial dose is given, this may be necessary). A better practice, when possible, is to use a second syringe to withdraw the remaining drug from a vial to be disposed of or to dispose of the vial with the medication inside—depending on the disposal method available.

Because protocols for handling and disposing of controlled substances vary widely from one facility to another, the healthcare provider should have a clear understanding of the policies and protocols in place. In some cases, protocols may need updating as technology is introduced, and nurses should take a proactive role.

Adverse Reactions

Patients should be carefully observed for adverse effects, specific to the drugs taken. While many adverse effects are similar, opiate agonists tend to have more adverse symptoms than opiate agonist-antagonists. Any adverse effect must be documented.

Common Symptoms Include:

- CNS: dizziness, confusion, insomnia, disorientation, and seizures (infants and children)
- CV: Orthostatic hypotension, bradycardia, palpitations, and cardiac arrest
- Skin: Pruritis, rash, urticaria, flushing, and cold, clammy skin
- EENT: Visual disturbances and pupil constriction
- GI: Nausea, vomiting, constipation, anorexia, dry mouth, and biliary colic
- GU: Urinary retention, urinary urgency, dysuria, and oliguria
- Respiratory: Depression, arrest
- Hypothermia and muscle flaccidity
- CNS: Euphoria, dizziness, drowsiness, change in mood, confusion, and light-headedness
- CV: Tachycardia, palpitations, and hypertension
- Skin: Rash pruritis, local irritation at inject site, and flushing
- EENT: Visual disturbances
- GI: Dry mouth, nausea, vomiting, constipation, and altered sense of taste
- GU: Urinary retention.
- Resp: Depression
- Allergic reactions and shock

If severe adverse effects occur, an opiate antagonist may need to be administered to reverse effects. Opiate antagonists are another class of drugs that block the effects of opiates:

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