

MEDICATION MANAGEMENT

INTRODUCTION

You can help prevent medical errors by learning the basics of medication management outlined in this handbook. Medication errors can happen at any step in the process.

- A physician writes the dose or name of the medication illegibly, or orders a medication that is too strong, or that interacts dangerously with another drug.
- A pharmacist puts the wrong medication, or wrong dose or strength of the right medication in a single-dose packet, or dispenses an injectable form that should have been oral.
- A nurse administers the right medication at the wrong time, or the wrong dose, or calculates an IV rate of flow to give too much medication - or give it too fast.

If errors are caught before the patient is harmed, it's called a Potential Adverse Drug Event - *a near miss*. If not and the error causes harm, it's called an Adverse Drug Event or ADE.

MEDICATION MANAGEMENT

After nearly a decade of research, experts have found that medical errors result from faulty systems, not individual people. We have to find and fix flaws in the processes and procedures that make up the medication system. Make them safe now, instead of reacting to errors after they happen.

These are some of the pro-active approaches to patient safety used in hospitals across the country.

- Easy-to-use reporting systems, either mandatory or voluntary, to report ADEs and near misses without fear of punitive actions.
- E-mail reporting or anonymous self-reports.
- Frequent reminders sent to all employees to encourage reporting.

When an error is found, we have to study it closely and make changes to reduce the likelihood of similar medical errors. One way to do this is a process called Root Cause Analysis. To conduct a Root Cause Analysis:

- Take a look at the sequence of events that led to the error.
- With representatives from every department involved in the error:
 - Identify the processes involved in the adverse event and keep asking why it happened.
 - Analyze each step in the process using a flow chart to show what actually occurred compared to what the correct process should have been.
 - Problem solve until you find the root cause in every process.
- Take action: revise policies and procedure to prevent future errors.

Your facility's professionals can report the error to a Sentinel Event Database, a computerized database of adverse events and lessons learned. Healthcare facilities can use this information to re-design risky processes before errors occur.

(Note: A Sentinel Event is an error that causes serious physical and psychological injury, death or and adverse outcome or the risk of an adverse outcome.)

STANDARDS TO USE MEDS SAFELY

Let's look at some of the basics of the Medication Use Standards, updated and revised to include lessons learned from reported Sentinel Events.

General Medication Use

The definition of medication now includes any product designated as a drug by the FDA including:

- Vaccines
- Diagnostic and contrast agents
- Respiratory therapy treatments
- Total parenteral nutrition
- Sample medications
- Radioactive medications, blood derivatives and IV solutions
- Prescription medications
- Over-the-counter medications
- Herbal remedies, nutraceuticals, vitamins and health supplements

Lack of basic patient information causes many medication errors. For example:

- A physician orders morphine for a patient with paralyticileus, or paralysis of the bowel - which makes the paralysis worse.
- A nurse gives an anti-hypertensive medication to a patient whose blood pressure has dropped. The patient's blood pressure drops so low, he or she loses consciousness.

All clinical staff involved in the medication-use process must have a minimum amount of patient information - readily available - to use before prescribing, dispensing or administering meds including:

- Age
- Height and weight
- Diagnosis and co-morbidities, such as renal failure and diabetes
- Pregnancy and lactating status
- Medication allergies and past sensitivities
- All current medications - prescription, over-the-counter and home remedies

Selection, Procurement and Storage

Your facility's staff constantly evaluates and improves medication processes using the latest technologies, best practices and lessons learned from Root Cause Analysis of Sentinel Events related to medication errors. Medication processes include:

- If a medication is proven risky, your facility may choose something safer, or prepare or store the medication differently.
- Medications must be stored to preserve stability.
- Look-alike, sound-alike drugs must be separated to minimize storage-associated errors.
- Dangerous non-drug chemicals must be segregated from medications.
- Medications must be stored according to OSHA requirements.
- Medications, chemicals and biologicals must be accurately labeled for content, expiration dates and warnings - with periodic inspections to remove expired, discontinued and contaminated meds.
- Floor stock should be in the most ready-to-administer dosage forms to minimize opportunities for error.
- Emergency meds in crash carts, tackle boxes and emergency drug kits must be readily available in patient care areas and locked, or stored in locked rooms, or under constant surveillance by licensed healthcare professionals.

Prescribing, Ordering and Transcribing

Your facility has policies and procedures for safe prescribing, ordering and transcribing to make sure all medication orders are clear, accurate, complete and legible. You'll need:

- Precautions for easily misinterpreted abbreviations and symbols and look-alike, sound-alike drugs.
- Precautions to take when medication orders are not complete or legible.
- Processes to verify verbal medication orders, to make sure they're correct.

Preparing and Dispensing

Pharmacists are asked to:

- Review all prescriptions and medication orders before the drug is dispensed or administered.
- Check the medication profile and other patient information to look for potential errors.
- Contact the prescriber or orderer when questions or concerns arise.

Administration of Meds

Your facility must have safe and accurate processes for the administration of medication, including:

- Clearly identifying staff qualified to administer drugs with and without supervision.

- Processes must be in place to respond to ADEs, adverse and toxic drug reactions as well as anaphylaxis. Design steps to protect the patient and talk to the family.
- Signs and symptoms of Adverse Drug Events are toxicity for various classes of medications must be readily available to all clinicians.
- Medications brought in by patients must be managed safely.
- Support (such as training and supervision) must be given to patients who need to self-administer prescribed medications.

Special Meds

Your facility must have special processes for medications with a high risk of causing ADEs, like insulin and heparin, including:

- Extra safety checks built into the administration process.
- Quality control steps for all levels of the medication process.
- A process must be followed for the safe use and disposal of controlled substances, especially waste and reconciling missing doses.

Monitoring of Meds

Failure to adjust medication doses can cause serious medical errors:

- Patients must be continuously monitored to make sure the medication is doing what it is supposed to do, and that no medication related problems occur.
- To keep improving the medication regimen, assessment should include the patient's own perceptions, vitals signs, lab results and clinical responses.

Avoiding Risky Behaviors and Special Handling of Meds at High Risk

Certain behaviors and specific drugs are more likely than others to cause errors - and some are very dangerous. Let's look at some high-risk situations and what you can do to avoid them:

- Avoid using potentially dangerous abbreviations and symbols. For example, a handwritten "U" can be confused with a zero "0" - resulting in a 10-fold overdose of insulin. Spell out the word units and other common abbreviations.
- Be alert for decimal point errors.
- Use computerized order entry systems whenever possible.
- Do not store problem medications alphabetically by name. Keep them in separate areas. Drug pairs that look alike or sound alike can lead to serious errors.
- Ask for both the generic and brand name of drugs for medication orders, and develop a policy to verify the accuracy of verbal or telephone orders.

- Read back the drug's name, its spelling and dosage ordered to double check.
- Make sure you have access to up-to-date reference materials on drug interactions and common side effects.

Medications with the highest risk of causing injury are called high alert drugs - insulin, opiates and narcotics, injectable potassium chloride or phosphate concentrate, IV heparin and sodium chloride solutions above 0.9 percent.

- Use a check system when administering these meds. One nurse sets up the drug, dose and pump setting, another reviews it.
- Do not store insulin and heparin together.
- Remove potassium chloride or potassium phosphate from floor stock.
- Use pre-mixed solutions whenever possible, as well as single-dose containers.
- Whenever possible, standardize and limit drug concentrations. Limit access to sodium chloride solutions above 0.9 percent and remove them from nursing units.
- Avoid using free-flow pumps - where there is a high risk of human error. Pumps with built-in safety shut offs are safer.
- Facility staff should use only one type of pump in an area. That way when you get busy, there's less chance of error.
- Before a high alert drug is infused, one nurse should set the pump controls and another should check the work.
- Procedures for giving medications in the OR should be simple and safe - especially when transferring drugs to the sterile field.

WHAT YOU CAN DO TO PREVENT MEDICATION ERRORS

Know your facility's rules on medication use and follow them:

- Think through each patient's care process before you begin. Ask yourself, what the steps I need to take in this process?
- What are the potential risk factors? The weak points in every step? And what can I do to make sure I fix them before bad things happen?
- Make sure medications and supplies are secured.
- Emergency medications and supplies must be available when needed. Replace emergency medications as soon as possible after their use.
- Remember the **FIVE RIGHTS** each time you administer a drug. Give the right medication to the right patient at the right time via the right route in the right amount.
 - Right medication
 - Right patient
 - Right route

- Right amount
 - Right time and frequency
- Always clarify unclear orders and confirm that an order makes sense when compared to the diagnosis.
- After administration, keep monitoring the effects and involve the patient in the process - especially patients in pain.
- Check to see that the drug is effective and whether the patient is demonstrating side effects.
- Remember, some adverse affects can appear a week or more after the medication has been administered.
- If your patient doesn't respond to therapy as expected, consider drug interaction as a possible cause.
- Encourage a culture of safety. Do your part to watch for risky processes and errors.
- Report any Potential and Actual Adverse Drug Events - even near misses.

Encourage patients - and family members - to question changes in medication regimens, and take them seriously.

SUMMARY

- Even one death from a medication error is one too many.
- Ask yourself what you can do to prevent errors.
- Encourage patients to be part of the team.
- Stay on the lookout for risky processes and procedures.
- Do your part to re-design the healthcare system and make medication errors a thing of the past.