

# Medication Administration Safety



# Medication Administration Safety Outline

- Introduction to Safe Medication Practice
- 4 Phases of the Medication Administration Safety Process
- High Alert Medications
- Technological Advances
- Pediatric Considerations
- Test



# Introduction to Safe Medication Practice

In 1999 the IOM report estimated that as many of 7000 patients die each year as a result of medication errors. Each of these preventable medication errors increased hospital costs.

Medication errors are the most common type of nursing error, the second most common TJC sentinel event, and the second most common error in a physician's office.



# Medication Safety Recommendations from the Institute Of Medicine Include:

- Implementing standard process for medication doses, dose timing and dose scale in the patient care areas.
- Limiting the number of types of common drug administration equipment.
- Implementing physician computerized order entry.
- Have a central pharmacy supply, high risk IV medications
- Use special procedures and written protocols for the use of high risk medications.
- Do not store concentrated solutions on patient care units.
- Ensure availability of pharmacist support
- Improve patient knowledge about their treatments.



# Medication Process

- **Phase 1-Ordering and Prescribing**
  - Nurse assists by having essential information readily available. This include diagnosis, allergies, age, weight, lab values, and current medications.
- **Phase 2-Dispensing**
  - Verify the right medication, right dose, and right dosage form are selected from the Pyxis.
- **Phase 3- Administration**
  - It is the responsibility of the professional nurse to administer medications to assigned patients.
- **Phase 4-Monitoring**
  - Reporting medication errors, near misses, and adverse drug reactions lay the foundation for improving systems and process for patient safety.



# Phase 1 - Ordering and Prescribing

## Computerized Physician Order Entry (CPOE)

CPOE is an electronic information system that provides clinical guidance during the ordering process and intercepts potential errors or variances at the point of order origination. BHSF is working towards all entities having CPOE.



# Phase 2 - Dispensing

## Safe PYXIS Use

- There must be a witness present when a narcotic is wasted.
- Narcotics must be counted in Pyxis every shift.
- Discrepancies must be resolved before end of shift.
- A small number of medications are available to be removed under the **override** feature (prior to a pharmacist reviewing the order). Medications are to be removed under the override feature only in emergencies or when the patient could be compromised by having to send a stat order.



## Phase 3 - Administration Precautions

- Be **knowledgeable** about the drugs' interaction, precautions and contraindications, potential adverse reactions, and proper methods of administration.
- Administer only those medications you have **personally prepared**.
- **Only use medication ordered for YOUR patient. Only use medications that are properly and clearly labeled.**
- Know how to operate the medication administration devices and equipment: PCA pumps, infusion pumps, etc. If not familiar with equipment ask before using the device to avoid errors!
- If a dosing calculation is required, the mathematical calculations should be verified with the pharmacist prior to administration.





## Phase 3 - Administration Precautions

- Verify **with another RN** pumps settings for high alert infusion medications.
- Be alert to medications that require **specific lab results**, such as INR, glucose, and creatinine.
- Be alert to dosing guidelines for **special populations** such as geriatric, pediatric, or renal patients.
- Do not administer **multiple dosage units** without double-checking for accuracy.
- Do not use part of a **single dose injection** and save the remainder for a later dose.



## Phase 3 - Administration Steps to Follow

1. Verify MAR with Physicians order.
2. If there is any question, concern, or contraindication with the appropriateness, accuracy, or safety of a prescribed dose, consult with a physician or pharmacist prior to administration.
3. Verify allergies.
4. Proper patient identification requires comparing the printed MAR with the patient ID bracelet.
5. Dispense medications to one patient at a time.
6. Verify the medication order and the product label on the dispensed medication.
7. Check expiration dates on all medications prior to administering.



## Phase 3 - Administration Steps to Follow

8. Confirm the eight rights before administering the medication.
9. Observe your patient taking their medications. Take this opportunity to educate the patient on their role in medication safety and the individual drug they are taking.
10. Keep the medication in the unit dose package to the point of actual administration.
11. **Document** all medication immediately after administration. If med is not given at the prescribed time, note the time given, reason why, and follow up activities. If med is **not given**, document why and if appropriate, report to physician.



## Phase 3 - Administration Steps to Follow

12. PRN orders must have times of administration or max daily dose and **indication for use**.
13. Be familiar with hospital policies and procedures and work within your scope of practice.
14. Verbal orders are only acceptable in emergency situations.



# Know the Eight Rights of Medication Safety

Right **P**atient

Right **D**rug

Right **D**ose

Right **D**osage **F**orm

Right **R**oute

Right **T**ime

Right **E**ducation

Right to **R**efuse

- Administer medications one patient at a time to help minimize distractions and prevent errors!
- Always value patient and family questions regarding their medication and remember the patient has the right to refuse any medication they do not feel comfortable with.
- High risk, high alert medications require verification with two RN's prior to administration.



QUESTIONS TO ASK		ACTIONS TO TAKE	
<b>When preparing to give medication:</b>			
<b>Right drug</b>	<ul style="list-style-type: none"> <li>• Has the patient been given this medication before?</li> <li>• Given the patient's symptoms and diagnosis, does it make sense for the patient to have this medication?</li> </ul>	<ul style="list-style-type: none"> <li>• Determine if the patient has any known drug allergies or sensitivities.</li> <li>• Assess the patient's other medications to detect possible contraindications.</li> <li>• Make sure it is the right medication; packaging, labeling, and spelling of some drugs look alike.</li> <li>• Have another person double check all medications.</li> </ul>	
<b>Right reason</b>	<ul style="list-style-type: none"> <li>• Do the patient's condition, symptoms, and health status warrant receiving this medication?</li> </ul>	<ul style="list-style-type: none"> <li>• Determine if the patient has the condition the medication is used for.</li> </ul>	
<b>Right dose and preparation</b>	<ul style="list-style-type: none"> <li>• Is the correct dose being administered?</li> <li>• How is the medication administered?</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure labeling is legible and clearly understood.</li> </ul>	
<b>Immediately before administering the medication:</b>			
<b>Right patient</b>	<ul style="list-style-type: none"> <li>• Is this the right patient to receive this medication?</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the identity of the patient using at least two identifiers (check wristband, ask patient his name).</li> </ul>	
<b>Right time</b>	<ul style="list-style-type: none"> <li>• Is this the correct time for the medication to be administered?</li> </ul>	<ul style="list-style-type: none"> <li>• Check when the medication was last administered. If the drug is new, document when it is first given.</li> </ul>	
<b>Right route</b>	<ul style="list-style-type: none"> <li>• Is it appropriate to administer the medication orally, intravenously, or by injection?</li> </ul>	<ul style="list-style-type: none"> <li>• Check the original orders to verify the route of administration.</li> </ul>	
<b>After the medication has been administered:</b>			
<b>Right drug, right dose, and right rate</b>	<ul style="list-style-type: none"> <li>• How is the patient responding to the medication?</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor the patient to               <ul style="list-style-type: none"> <li>• determine the efficacy of the drug.</li> <li>• detect and prevent complication.</li> <li>• evaluate and document changes in health status.</li> </ul> </li> <li>• When applicable, assess the patient's laboratory values to detect changes.</li> <li>• Provide patient education, when possible, so patient is alert to adverse effects and changes in how he feels.</li> </ul>	

Institute for Safe Medication Practice. 2003. <http://www.ismp.org>; Pape TM. *Med Surg Nurs* 2003;12(2):77-93; quiz 4; Allan EL, Barker KN. *Am J Hosp Pharm* 1990;47(3): 555-71.



## Phase 4 - Monitoring Effects of Medication

Monitoring the effects of medication on patients helps to assure that medication therapy is appropriate and minimizes the occurrences of adverse events. Reporting of near misses medication errors and adverse drug reactions lays the foundation for implementing change to improve systems and process for patient safety.



# Patient Monitoring

- Monitor the patient's response to medication according to the clinical needs of the patient.
- Inform the patient or, if appropriate, the patient's family about any potential adverse reaction or other concerns when administering a **new medication**; encourage the patient/family to report these to you accordingly.
- Gather the patient's own perception about side effects, signs and symptoms, and potential medication problems.
- Assess relevant patient information such as lab values, clinical response and medication profile.
- Encourage patient and family involvement in their care. Provide patient education at every opportunity.
- Report adverse reactions to the physician and to the pharmacy as per hospital guidelines.
- Remember to document patients response to medication.





# Adverse Drug Reactions (ADRs)

- Definition: an Adverse Drug Reaction is an unexpected, unintended, undesired or excessive response to a drug that:
  - requires discontinuance or change in drug or dose
  - requires admission to the hospital or prolongs hospital stay
  - requires supportive treatment and/or complicates diagnoses
  - results in permanent disability, death or harm.
- ADRs are reported via online incident report or telephone extension
- Document in record, patient's reaction and care rendered



# How to Prevent the Most Common Errors in Medication Administration Process

The most effective way to prevent errors include the following:

- Appropriate ordering and prescribing medications for the patients diagnosis and condition.
- Having essential resources such PDR: Micromedex; patients medical record readily available.
- Proper dispensing of the right drug, the right dosage form, the correct frequency, and without contraindications.
- Providing a final check prior to dispensing the medication according to the eight medication rights.
- Allowing the patient/family to be actively involved in posing questions about the medication they are receiving and giving the patient the opportunity to learn and be actively engaged in their care.
- Embracing a “culture of patient safety” at the facility.



# High Alert Medications

H I C K + O P

## *Acronym for High Risk, High Alert Medications*

Those drugs involved in a high percentage of medication errors and carry a higher risk for errors or other adverse outcomes. These medications require a second nurse to verify correct drug and dose prior to administration.



# High Alert Medications

- H = Heparin
- I = Insulin
- C = Chemotherapy
- K = Potassium
- O = Opioids via PCA
- P = Pediatric-neonatal



# Technological Advances

## Bar Coding at Point of Care

- Bar codes are a system of machine-readable codes that uniquely identify an item. A bar code typically has identification data encoded in it that are used by a computer to correlate all specific information associated record that contains descriptive data and patient information.



# Technological Advances

## ONLINE MEDICATION INFORMATION

- Micromedex contains summaries and detailed monographs for drugs, disease, alternative medicine, toxicological management, and patient education documents. Patient education is presented in English and Spanish. For a tutorial on how to maximize your Micromedex usage, go to the Intranet Sun Page and click on nursing.



# Pediatric Considerations

In pediatrics, based on the special needs of this population extra efforts need to be followed to avoid common medication errors. It is important to involve the parents/family in all aspects of the child's care and treatment.



# Pediatric Medication Safety Practice

- Verify medication calculations with a pharmacist.
- Always obtain the child's weight in **Kilograms**.
- All pediatric medications are considered high risk, and require a second nurse to verify correct drug and dose prior to administration.
- Follow the eight patient medication rights as per policy.
- Verify drug orders before medication administration as per policy.





# Pediatric Medication Safety Practice

- Unusually large or small volumes or dosage units for a single patient dose should be verified.
- When a parent or caregiver questions whether a drug should be administered, listen attentively, answer questions, and verify the medication order.
- Educate parents/caregivers about medications and potential side effects.
- Know how to operate the medication administration devices and equipment: PCA pumps, infusion pumps etc. If not familiar with equipment ask before using the device to avoid errors!



# Human Factors

***Over time***, as our perceptions of risk fade away and we try to do more with less, we may take shortcuts and drift away from behaviors we know are safer. Although the steps we take are often redundant they are in place to catch unintentional errors that may have occurred due to human factors. Your best practice is to always follow policy and procedures and work within your scope of practice.

