MEDICATION SAFETY

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Objectives
- Review systems approach for analyzing and improving safety in the medication use process.
- Describe strategies currently being used by health care organizations to reduce medication errors.

“Blame and move on” approach
- Find out who did it.
- Blame the employee.
- Sanction the employee.
- Retrain the employee.
- Move on.
- Same error will happen again.
Systems Approach

- Medication systems are extremely complex.
- Most errors occur when more than one step in the process breaks down.
- System analysis digs deep into the process to identify and understand what went wrong.

Human Component to Error

- Humans make mistakes.
- Humans tend to err when relying heavily on memory and observation.

System Oriented Approach to Med Error Reduction

- Multi-faceted approach
- Proactive
- Learning environment
- Track and analyze data
Multi-faceted Approach

- Review internal medication events as part of the learning process.
  - Develop on-line reporting systems.

Promote a learning environment

- Encourage staff to share safety concerns with managers.
- Non-punitive, anonymous reporting.
- Be open about medication errors and share ideas and strategies with staff.
  - It is important that staff know their concerns are being addressed. Will increase reporting.

Root Cause Analysis

- Process for identifying the basic or causal factors that underlie variation in performance, including the occurrence of a sentinel event.
- Sentinel Event is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.
Medication errors: Potential factors

- Patient identification process
- Staffing levels
- Orientation and training of staff
- Competency assessment/credentialing
- Supervision of staff
- Communication among staff members
- Availability of information
- Adequacy of technological support
- Equipment management/maintenance
- Physical environment
- Control of medications: storage and access
- Labeling of medications

JCAHO National Patient Safety Goals

- Improve the accuracy of patient identification
- Improve the effectiveness of communication among caregivers
- Improve the safety of using high-alert medications.

JCAHO National Patient Safety Goals

- Improve the safety of using infusion pumps
- Review look-a-like/sound-a-like drugs annually.
- Medication labeling on and off the sterile field.
JCAHO National Patient Safety Goals

- Medication Reconciliation across the continuum of care
  - Complete list of home medications
  - Compare home list to admit, transfer and discharge orders.
  - Needs to occur in ambulatory setting.

Medication Use Standards

- New JCAHO standards Jan 2004
- Focus on medication safety strategies
  - Order legibility
  - Order clarity (no blanket orders, appropriate use for titrating orders, tapers, dose range orders)
- Medication labeling

Standardization

- Preprinted order sets
- Avoid abbreviations
- Spell out “units”
- Equipment (infusion pumps)
- Drug concentrations
Verbal Orders

- Verbal orders for medications should only be taken in an emergent situation.
- Telephone orders for medications should always be read back to the prescriber AFTER the order has been transcribed to paper.
- When reading back orders verify numbers. *15 could be mistaken for 50.*

### Dangerous Abbreviations

<table>
<thead>
<tr>
<th>UNACCEPTABLE</th>
<th>ACCEPTABLE</th>
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<tbody>
<tr>
<td><em>ver</em> (abbreviation for <em>vial or c.c.</em>)</td>
<td>Always spell out “vial”</td>
</tr>
<tr>
<td>IU (abbreviation for <em>International Unit)</em></td>
<td>Write “units”</td>
</tr>
<tr>
<td>Q.H.R. or Q. &amp; A.D. (may be transcribed to QID)</td>
<td>Write “daily” and &quot;every other day”</td>
</tr>
<tr>
<td>Trailing zero (e.g., mg or mg/mL)</td>
<td>Never write a zero after a decimal point (e.g., mg, always use a zero before decimal point (e.g., mL)</td>
</tr>
<tr>
<td>MS, MSO4, MgSO4</td>
<td>Write “magnesium sulfate”</td>
</tr>
<tr>
<td>MTX (for Methotrexate)</td>
<td>May be confused for Methocel</td>
</tr>
<tr>
<td>Epit (for Epinephrine)</td>
<td>Always spell out drug names</td>
</tr>
<tr>
<td>PE (for epinephrine)</td>
<td>Write “mg”</td>
</tr>
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### Physician Order Entry

- Prevents misinterpretation of handwritten orders.
- Provides decision support.
- Avoids double entry systems.
Automation Systems

- Drug interactions
- Allergy alerts
- Duplicate therapy alerts
- Dose-range checking
- Point-of-care
- Smart pump technology

High Risk Drugs

- Chemotherapy
- Neonatal/Pediatric doses
- Warfarin/Heparin
- Insulin
- Potassium chloride

Similar Packaging
Look-a-like/Sound-a-like Drugs

- Review how drug is displayed in computer system. If doses are similar will it be easily confused?
- Review storage of the medications. Separate and use alerts.
- Tall-man letters
  - doPAMine
  - doBUTamine

Pharmacist on Patient-Care Team

- Leape, 1999
- Rate of preventable prescribing ADE’s decreased by 66% when pharmacist on ICU service.
Unit-Dose Medications

- Avoid dispensing bulk items
- Do not floor stock concentrated electrolyte solutions.

Access to Patient Information

- Allergies
- Weight
- Labs
- Electronic chart
- Problem list

Drug Allergies

- Drug allergies should be assessed by a health care professional on admission.
- All drug orders are reviewed by a pharmacist before administration of first dose.
- Bar-code technology to ensure patients do not receive a drug that patient is allergic to.
- Standardize documentation of drug allergies in the medical record.
Patient

- Talk to patients about their medications.
- Involve patients in verifying or clarifying allergies.
- Give patients written/verbal information about medications.
- Listen to your patients.

For More Information

- To Err is Human, Institute of Medicine, National Academy Press, 1999.
- www.jcaho.org