Medication Safety: Preventing and Managing Medication Errors

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Objectives
- List the major pitfalls contributing to medication errors
- Perform a root cause analysis of a medication error
- Outline the elements to be included in the documentation of a medication error
- Formulate a process to minimize the risk of medication errors at transitions of care
- Develop a quality action plan to address, prevent, and monitor medication errors

It takes less time to do a thing right than it does to explain why you did it wrong.

~ Henry Wadsworth Longfellow
Medication errors harm 1.5 million annually
- 400,000 in hospitals
- 800,000 in LTC
- 530,000 among Medicare beneficiaries in outpatient settings
- Medication related deaths/year
  - 40,000 – 100,000
  - A majority of medication errors occur when patients are at transition or interfaces (2)

Why so many in Long Term Care?
- Number of medications used
- An at-risk population
  - Cognitive impairment, poor patient recognition of their medications
- Errors of omission – 56%
- Dose related errors – 25%
  - Any overdose may be toxic
Nursing home medication errors involve a number of different circumstances

- Lack of proper patient assessment
- Lack of monitoring for medication’s efficacy
- Lack of reassessment for continuous need for medication
- Lack of monitoring for adverse drug reactions (ADRs)
- Lack of recognition of ADRs
- Attributing symptoms of ADRs to other causes
- Inadequacies in staff education or training
- Nursing home employees stealing medication
- Administering medications late
- Missing a medication and giving double dosage at a later time
- Administering the wrong medication

Nursing Home Adverse Events

- 49% - when caregivers fail to monitor adequately
  - Inadequate lab monitoring
  - Failure or delay in responding to symptoms or signs of drug toxicity
- Prescribing errors
  - Wrong dose
  - Drug interactions
  - Wrong choices of drug

Case Study #1
Case Study #1
No Error Ever Stands Alone
- Order for a blood pressure medication Zebeta® filled with Diabeta® 2.5 mg used to treat diabetes.
- Pharmacy mis-interpretation
- Facility perpetuated the order
- Prescriber signed
- Patient received both drugs for 20 days.
- Patient hospitalized with low blood sugar

What happened?

Root Causes of our Serious Dispensing Occurrences
- Human Factors
  - Inattention
  - Distraction
  - Interruptions
  - Multitasking
  - Rushing
  - Fatigue
- Systems & Methods
  - Lack of training
  - Depending on a Pharmacist to catch our mistakes
  - Mixed items on the shelf
  - Over riding bar codes
  - Over riding clinical warnings
Conclusion

- Most medication occurrences are due to problems in the system or processes of how we do things, NOT from personnel issues
- Focus on improving the “process” or steps in care delivery, not individual performance.
- Our Medication Occurrence Prevention and Reporting Program is not punitive; setting the appropriate attitude and environment is critical.
- Your participation is the only way to protect our Residents, our Employees, our Corporation

Approaches to Accuracy

- Read, read, read
- Be deliberate
- Focus, avoid interruptions, avoid fatigue
- Never guess when you are not sure of information you are entering
- Check your input against the order
- Double check your calculations
  - Two nurses
- Use drop down boxes where provided
- Don’t be afraid to document your work on the order received from the facility with name, date and time of day

Order Entry

- A new essential function of electronic records
- Accuracy is imperative
  - Right Resident (name and patient number)
  - Right Facility (location, room, bed #)
  - Right Drug
  - Right Strength
  - Right Directions (sig codes)
  - Right prescriber
  - Use of Stop Orders for limited duration of therapy
The Long Term Care Perspective

Skilled & Assisted Living Centers

- Medications are the mainstay of treatment in the chronically ill
- LTC residents may take eight or more medications every day
- Comorbidities complicate the outcome of medication errors in our already-compromised residents and guests

LTC Pitfalls in Medication Errors

- Communication
- Name Confusion
- Labeling and Packaging
- Human Factors
- Systems Related Factors

Long Term Care Pitfalls -

*Cause:* Verbal **Communication**

- Verbal miscommunication - in person or by telephone
  - "Whisper down the lane" effect - Physician, to nurse, to pharmacist
  - Accents, dialects, pronunciation
  - Background noise, interruptions
  - Unfamiliar terminology
Safe Verbal Communication

- Enunciate clearly
- Receiver must repeat the order
- Spell unfamiliar drug names
- Ensure the order makes sense
- Record the verbal order immediately
- Sign, date, and time the verbal order

Safe Verbal Communication

- Obtain the caller’s phone number
- Obtain indication or reason for use
- Limit the number of personnel who can take a verbal order
- Have a registered pharmacist receive all verbal orders
- Fax complex orders

Paris in the spring
Diabeta?

Long Term Care Pitfalls –

**Cause:** Written Communication

- Poor handwriting
- Interpretation, mis-read, not read
- Omission of important information
- Abbreviations
- Non-metric units
- Trailing and leading zero’s
- Decimal Points

Long Term Care Pitfalls - Written Communication

- Pharmacy-generated, computerized physicians order sheets, MARS & TARS
- Fax machines
- Copy machines with extraneous markings
Safe Written Communication

- Legible handwriting
- Computerized prescribing technology
  - Computers at nurses stations
  - Palm technology for physicians
- Complete orders including strength
- Include indication and reason for use
- Standardized abbreviations

Unsafe Abbreviations

Examples

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>U or u</td>
<td>Unit</td>
</tr>
<tr>
<td>q.d or QD</td>
<td>Every day</td>
</tr>
<tr>
<td>MS, MSO4, MgSO4</td>
<td>Morphine Sulfate Magnesium Sulfate</td>
</tr>
<tr>
<td>&gt; Or &lt;</td>
<td>Greater than Less than</td>
</tr>
<tr>
<td>A.S., A.D., A.U</td>
<td>Left ear, right ear, both ears</td>
</tr>
</tbody>
</table>

Safe Written Communication

- Policies and Procedures for computerized physicians orders
- Business machines clean & in good working order
Long Term Care Pitfalls - 
Name Confusion

- Look-alike, sound-alike, 25% of all errors
  - Brand names
  - Generic names
  - Over the counter products
- Safety with medication names
  - Repeat the order
  - Ask "Is that correct?"
  - Include indication or reason for use

Lillian Williams
Gillian Williams
Glyburide-Glipizide

Look-alike / Sound-alike

<table>
<thead>
<tr>
<th>Example</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flomax®</td>
<td>Fosamax®</td>
</tr>
<tr>
<td>Morphine Concentrate</td>
<td>Morphine solution</td>
</tr>
<tr>
<td>MS Contin ®</td>
<td>Oxycontin ®</td>
</tr>
<tr>
<td>Proscar ®</td>
<td>Prozac ®</td>
</tr>
<tr>
<td>Serzone ®</td>
<td>Seroquel ®</td>
</tr>
<tr>
<td>Wellbutrin SR ®</td>
<td>Wellbutrin XL ®</td>
</tr>
</tbody>
</table>
Long Term Care Pitfalls - Labeling and Packaging

- Wrong resident name
- Wrong drug name or strength
- Wrong directions
- Incomplete directions
- Lack of or wrong ancillary directions
- Looks too similar to another product
- Controlled substances packaging & documentation
Safe Labeling and Packaging

- Procedure for receipt of medications from the pharmacy
- Check all new orders against the physicians order
- Check each prescription label against the MAR and TAR
- Check each tablet identifier against the prescription label

Long Term Care Pitfalls - The Human Factor

- Knowledge deficit, Poor performance
- Miscalculation of dosage
- Incorrect infusion rate
- Data entry error
- Failure to prepare a medication properly
- Cart preparation
Long Term Care Pitfalls - The Human Factor

- Stress
- Workload
- Fatigue
- Learning curve for electronic health records/orders

Long Term Care Pitfalls - Systems Related

- Emergency box use
- Lighting and noise
- Interruptions and distractions
- Training
- Adequate staffing
- Availability of physician or pharmacist
- Policies and Procedures
- Medication Reconciliation

Warfarin Drug Interaction

- Warfarin interacts with many antibiotics!
- Did you remind the prescriber the resident uses warfarin?
- Do not remove the antibiotic until you check with the prescriber or the pharmacist
Possible Allergic Reaction!

- Check for drug allergies to before removing any dose from the emergency medication supply.
- Not sure? Call and speak with a pharmacist.

Long Term Care Pitfalls - Systems Related

- Drug delivery and distribution systems
  - Title 22 in California
  - CMS regulations
- Polypharmacy
- Stop order policies
- E-Prescribing

E-Prescribing Pitfalls

- Structured and free text fields
- Drug line, Directions line, Special Instructions
- Complex regimens
- PRN
- Sig to time conversions for administration times
- Duration of therapy
Medication Errors: The Other National Drug Problem
July 22, 2012
12:30-2:00pm

The Dreaded Controlled Substance Prescription for a Resident in Pain

Medication Reconciliation
- Any change in care: settings, service, practitioner, level of care
- 50% of all medication errors occur at transition of care

• Complete list of current medications
• Validate with patient, if possible
• Use a consistent form
• Designate responsibility
• Reconcile within 24 hours
• Reconcile sooner if using high risk medications
• Provide discharge medication information
• Develop a policy and procedure
• Teach it

Detecting Medication Errors
- Receiving and checking drug deliveries
- Monthly Physician Order Recapitulation
- Reconciling Product to MAR and TAR
- Chart Audits

• Recognizing Adverse Drug Reaction:
  • Resident Complaint
  • Resident Change of Status
  • Abnormal labs
Preventing Medication Errors

- Report errors
- Trend types of errors
- Document outcomes
- Analyze causes
- Take action
- Monitor success

Reporting Medication Errors - The Event

When?
- Date
  - Week day, weekend, holiday
  - Time of day error occurred
  - Which med pass?
  - Initial report date
  - Follow up report date

Reporting Medication Errors - The Event

- Setting
  - Post acute unit, chronic care
  - ALF, Adult day care, dementia unit, other
  - Home on LOA
  - Pharmacy
Description of Event
- Record immediately
  - So you won't forget
- A Narrative in your own words
  - No opinions- Just the fact, ma'am!
- How discovered
- How perpetuated
  - 1 pharmacy error or 30 NF errors

Description of Event
- Labs performed, date(s) of additional therapy
- Indication for use
- Medical intervention necessary
- Immediate corrective action

Resident Outcome
- No Harm
- Harm
  - Categories of harm
- Death
  - Sentinel Event
Categories of Harm

- **Category A: No Error**
- **Category B: Error occurred but medication did not reach resident**
- **Category C: Error reaches resident, but did not cause harm**
- **Category D: Error occurred that resulted in monitoring, but no resident harm**
- **Category E: Error resulted in need for treatment or intervention and caused temporary harm**
- **Category F: Error resulted in initial or prolonged hospitalization and caused temporary harm**
- **Category G: Error resulted in permanent harm**
- **Category H: Error resulted in near-death event**
- **Category I: Error resulted in death**

Reporting Medication Information

- Name of drug
  - Brand name, generic name
- Strength, frequency, route
- Prescription, OTC, Investigational
- New admission order
- Failed medication reconciliation

- Therapeutic class
- Name of manufacturer
- Dosage form
- Package type
Personnel Involved

- Who made the error
- Who discovered the error
- Physician, Nurse Practitioner
- Nursing assistant/medication assistant
- Pharmacist, pharmacy technician
- Respiratory Therapist
- Physical Therapist

Type of Error

- Omission
- Wrong resident, drug, strength, time, route, dosage form
- Wrong technique
- Wrong rate of infusion, wrong duration
- Monitoring error
  - Allergy, drug-drug interaction, drug-food interaction, drug-disease interaction, clinical
  - Expired drug

Reporting an occurrence is a non-punitive event...

Reporting helps us to prevent it from happening again!

Reporting helps us find the best way to do things!
“If we do not all hang together, surely we will all hang separately.”

Benjamin Franklin

References

5. ISMP List of High Alert Drugs. ISMP 2012.
References


NADONA July, 2012