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MANAGING medication systems

Finding the Best Approach

References:

Bates, D.W., "Medication Errors. How common are they and what can be done to prevent them?", *Drug Safety* 5:303-310, 1996

"Behavioral Safety: The Missing Piece", *Occupational Hazards*, 5:1998, P.49-54. Leape, L.L., "Errors in Medicine", *JAMA* 272(23): 1851-1857, 1994

"Medication Use: A System Approach to Reducing Errors", edited by Diane DeMichele Cousins, RPH., Joint Commission. 1998.

National Coordinating Council for Medication Errors Reporting and Prevention, Rockville, MD, 800-487-7776

This loss control brochure is offered in the hope that readers will benefit from it and take adequate steps to avoid conditions that might result in loss. It does not intend to be a complete discussion of the subject, nor do we guarantee that compliance with its suggestions will assure the safety of persons and property.



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What is the definition of a Medication Error?

Medication errors or medication misadventures describe events in the medication prescribing, preparation, distribution and administration process that results in a consumer incorrectly receiving a medication.

Why do we report Medication Errors?

Reporting medication errors is the most effective way to protect our clients and maintain their safety.

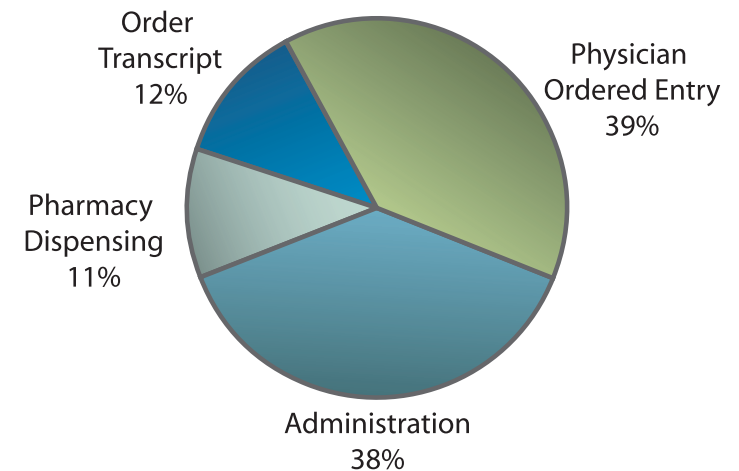


- Medical Errors - The Statistics

48,000 to 98,000 people die each year as a result of preventable medical error.

1999 - Institute of Medicine Report
"To Err is Human:
Building a Safer Health Care System."

Common Causes of Error



Additional Tips to Prevent Medication Errors

- ▶ Write on back of the script what the actual orders are
- ▶ Talk with the doctor
- ▶ Talk with the pharmacy
- ▶ Know why the consumer went to the doctor (to get an idea if the medications fit the diagnosis)
- ▶ Use appropriate stickers
- ▶ Bring an updated medication sheet to the doctors office
- ▶ Eliminate distractions (e.g. TV) when giving medication
- ▶ Get to know and use the same pharmacy

Abbreviations

<u>Abbreviation</u>	<u>Intended Meaning</u>	<u>Common Mistake</u>
U	Units	Mistaken as a zero
Q.D.	Daily	Mistaken as QID or 4 times per day
Q.O.D.	Every Other Day	Mistaken as QID or 4 times per day
D/C	Discharge, also Discontinue	Residents may have meds prematurely discontinued when discharge was meant
HS	Half Strength	Mistaken as Bedtime dose
AU, AS, AD	Both ears, Left Ear, Right Ear	Mistaken for Eyes
Mcg	Micrograms	Mistaken for Mg. Results in a 10 - fold overdose

Similarly Spelled Medications Can Create Errors

Prescribed Medication	Med Causing Confusion
Quinine 200mg PO	Quinidine 200mg PO
Sulfasalazine 500mg QID	Sulfadiazine 500mg QID
Norvasc 10mg PO	Navane 10mg PO
Hydroxyzine 25mg PO	Hydralazine 25mg PO
Klonopin 0.5mg PO	Clonidine 0.5mg PO
Chlorpropamide	Chlorpromazine

Managing Medication Systems

Finding the Best Approach to Reduce Medication Errors - Systems or Behavioral?

In 1995, the National Coordination Council for Medication Error Reporting and Prevention, a collaboration of healthcare and consumer groups, established the definition of a medication error:

"A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practices, health care products, and/ or procedures and systems, including prescribing, order communication, product labeling, packaging, distribution, administration, education, monitoring, and use."

This definition highlights the large number of people who are responsible for the entire process of medication usage. The leading researchers in the field, Leape, Bates, et.al, believe that a systems approach to reducing medication errors will be the most effective along with training to reduce human errors.

We seem to have become complacent with regard to the problem of medication errors. The issue of medication errors and the potential for adverse drug effects in provider programs do not have a high profile. Although the problems are widely discussed and studied in hospital based programs (22% of sentinel events since 1966 were related to medication errors, JCAHO), there is no data available for long term care, outpatient programs, or the newer models of individualized services. As service delivery models become more individualized and decentralized, problems are exacerbated and there is an increased need for improved controls, increased training, and system designs that minimize the opportunities for human error.



A system can be defined as a combination of interdependent processes that share a common goal. The goal in a medications system can be described using the "seven rights" to increase the likelihood that the right dose of the right drug is provided to the right patient through the right route at the right time with the right results. (*Medication Use: A Systems Approach to Reducing Medication Errors, JCAHO 1998*)

All staff should follow the "seven rights"

1. The right individual
2. The right medication
3. The right dosage
4. The right frequency or time
5. The right route
6. The right form
7. The right documentation

When utilizing the systems approach, providers should review the entire medication process to look for the weak links. A root cause analysis should be done on known medication errors that have occurred to determine where the breakdowns occurred and how a system design change could have prevented the errors. Some examples of system designs are unit-dose dispensing, computerized physician entry, computerized pharmacy checking, computerized medication administration recording, and targeted education programs.

Six Basic Types of Administration Errors:

1. Errors of Omission
2. Errors of Commission
3. Incorrect Dose Preparation Error
4. Incorrect Administration Technique
5. Deterioration Error
6. Unordered or Extra Dose Medication Error



Prescribing Error:

- ▶ Incorrect drug selection; contraindication; known allergies; harmful interaction with existing therapy
- ▶ Incorrect dose: dosage form, quantity, route, concentration, rate of administration
- ▶ Illegible prescriptions or medication orders that lead to errors that reach the patient

Omission:

- ▶ Failure to administer ordered dose at time and interval scheduled

Wrong Time:

- ▶ Administration of medication outside a predefined time interval from its scheduled administration time (this interval should be established by each individual healthcare facility)

Unauthorized Drug:

- ▶ Medication not authorized by the physician for the patient
- ▶ Wrong drug; a dose given to the wrong patient

Improper Dose:

- ▶ Administration of a dose that is greater or less than the amount ordered by the physician

Monitoring:

- ▶ Failure to review a prescribed regimen for appropriateness and detection of problems or failure to use appropriate clinical or laboratory data for adequate assessment of patient response to a prescribed drug

Compliance:

- ▶ Inappropriate patient behavior regarding adherence to a prescribed medication regimen

Most states require Medication Administration Training for direct support professionals in order to certify their competence. This training is essential and strong emphasis should be placed on its importance. The DSP staff must also understand that with changes in activity level, eating habits, mood affects, rashes, or unusual behavior should be reported immediately to a supervisor or medical staff. Effective communications will prevent a medication error from escalating into an adverse drug event.

Provider issues will vary with the type of services that you provide along with the disabilities of your customers. Issues of direct staff turnover, medication non-compliance, self-administrating evaluations, and decentralization of programs all require our increased vigilance because they impact medication errors. Providers must review their medication "system" for areas that can be improved so that the opportunities for human errors are reduced. Decentralized programs moving to a more community based environment may need to include physicians and pharmacists in their circle of support networks.

Systems need to be developed so that monitoring of medications is a primary focus of case management services. These system redesigns, along with the goal of reducing errors in all categories, will improve the health and welfare of provider customers.

In order for your organization to track and quantify medication errors, you should first develop categories for tracking purposes. These categories have been extracted from a list developed by the American Journal of Hospital Pharmacy:

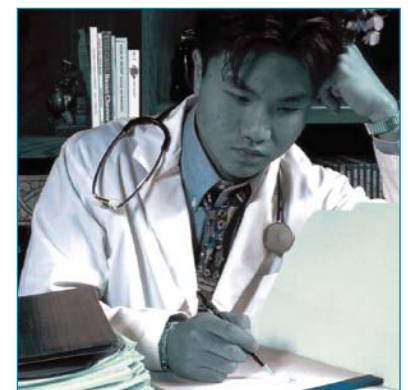


Depending on the type of services that your program provides, you may have direct control over only one or more portions of the medication system. Regardless of this factor, you should view the process as a system and reach out to all those involved who are not in your control to participate in this effort in order to reduce medication errors and the potential for adverse drug effects.

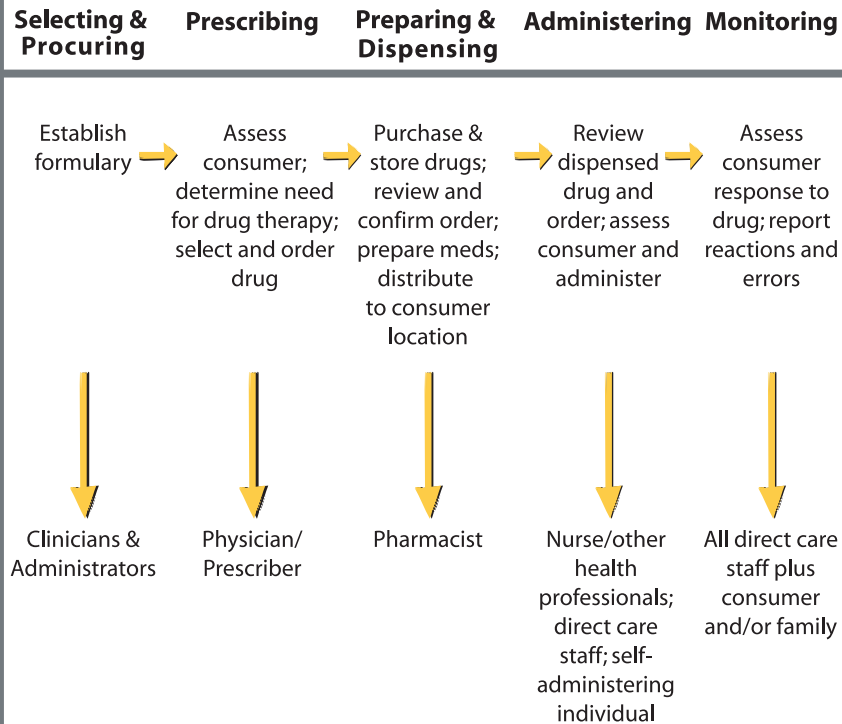
Systems Approach to Reducing and/or Preventing Medication Errors

- ▶ Establish a multi-disciplinary team to set goals
- ▶ Promote a non-punitive approach
- ▶ Increase detection of errors and hazardous situations
- ▶ Understand the root causes of errors
- ▶ Educate
- ▶ Respond to errors
- ▶ Facilitate agency-wide system-based changes

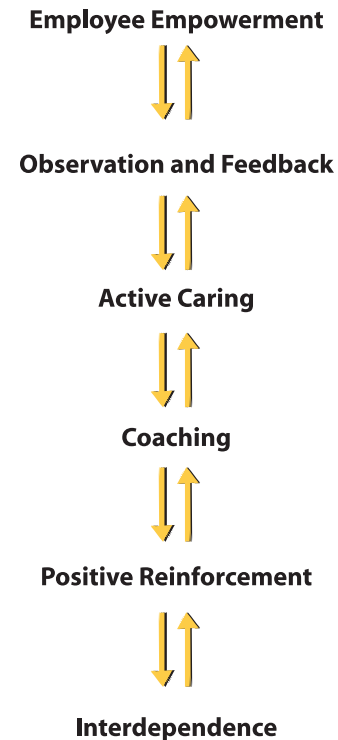
Accreditation programs, state and federal regulators, and payors may not require documentation of common medication errors unless they reach the threshold of a serious adverse drug event. In safety circles, this attitude ignores the "iceberg theory" that the frequency of so-called unreported or hidden events is not as important. In reality, if you have a frequency problem of minor errors, chances are you have a higher probability for a serious adverse drug event to occur.



Systems Approach



Behavioral Approach



The basis of the systems design approach to medication errors is to understand that human error will occur despite our best efforts. The question then becomes, "How do we develop a safety or quality culture within our program to minimize errors when we can not fully automate the medication system?"

In the 1930s H.W. Heinrich's research concluded that primarily, unsafe acts or human error caused 88% of accidents. At about the same time, B.F. Skinner was developing his theories on behavioral science that looked at what people do, analyzing why they do what they do, and applying principles to reinforce correct behaviors while changing incorrect ones.

Since the 1980s, a small but influential group of safety consultants, notably psychologists, have been pushing behavioral principles to reduce errors and change behaviors and attitudes. They promote employee empowerment, observation and feedback, active caring, coaching, positive reinforcement, and interdependence. This approach, along with continuous quality improvement techniques, offers some hope for providers to reduce the human errors that occur in medication systems.