
Important Information on Preventing Medication Errors

By:

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Learning Objectives

- 1) Define the process of root cause analysis
- 2) Describe the common pitfalls of root cause analysis
- 3) Describe common at-risk behaviors and their role in medication errors
- 4) Describe common medication error prevention techniques with oral syringes
- 5) Discuss how the economic climate affects medication errors
- 6) Describe how to prevent medication errors using symbols, decimals, and zeros correctly
- 7) Describe how fax machines can contribute to medication errors
- 8) List common pharmacy practice tips for reducing medication errors

Medication errors in health care facilities and practice sites continue to be a concern to health care practitioners and patients. The extent of this problem was first brought to the public's attention by the Institute of Medicine's (IOM) report "To Err is Human-Building a Better Health System".¹ This report estimated that between 44,000 and 98,000 Americans die of medical errors each year in hospitals and as many as 40% of these could have been prevented. This results in an estimated \$17 to \$29 billion in lost wages, disability payments, additional medical care and other costs. A follow-up report by the IOM called "Preventing Medication Errors" found that medication errors harm 1.5 million people per year.² In addition, 400,000 preventable adverse drug events occur per year in hospitals, which equates to about one medication error per patient per day.² A study by Rupp et al. estimated that the rate of medication errors found by community pharmacists was 2.6% for new prescriptions.³ The types and percentages of errors in the study were: prescription deficiencies 51%, prescription errors 29%, patient comprehension issues 12%, and significant drug interactions 9%. In a survey conducted in 1996 of 1000 community pharmacists, more than 50% reported making a dispensing error within a two-month period.⁴ Many of these errors were caught before they reached the patient, but these "near-misses" illustrate the potential for future errors and harm to the patient.

Before discussing medication error prevention techniques and tools, it is important to define what exactly a medication error is. The National Coordinating Council on Medication Error Reporting and Prevention defines a medication error as: "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 practice, health care products, procedures, and systems including: prescribing, order communication, product labeling, packaging, nomenclature, compounding, dispensing, distribution, administration, education, monitoring and use". As stated in this definition, medication errors encompass a wide variety of activities that occur during the medication use process. It is also important to understand that non-preventable adverse drug events (ADEs) are not considered medication errors because their occurrence cannot be predicted nor prevented. For example, if a patient had an allergic reaction to yellow dye #2 used in a generic drug, but did not know she was allergic.

2

This would not be considered a medication error. However, if the patient had an allergic reaction to cefaclor documented in her patient profile and the pharmacist dispensed cefdinir this would be considered a medication error.

Unfortunately, even in the best designed system of providing medications to patients, errors still do occur. A common misconception is that many medication errors are made by incompetent health care professionals that have a history of making several errors over time. In general, it is rare for a health care professional to make multiple medication errors. More often, a medication error occurs due to a breakdown in the medication use process. This breakdown often occurs at more than one step in this process. The medication use process consists of five major categories all of which have several steps within each including: prescribing, documenting, dispensing, administering, and monitoring. The Institute for Safe Medication Practices (ISMP) estimates that the average number of steps in the medication use process is 40. A breakdown in any one of these steps has the potential to cause a medication error. Some health care professionals think that many of the errors that occur in the medication use process happen in dispensing. However, this may not be the case. A study by Bates et al. found that 56% of errors occur during prescribing, 34% during administration, 6% during transcription and only 4% during dispensing.⁵

Root Cause Analysis

Whenever a medication error occurs, a root cause analysis should be conducted. In general, root cause analysis is undertaken after a medication error has already occurred. This analysis should focus primarily on the systems and processes to determine why an error occurred. It should not focus on individual performance issues. Any root cause analysis should be extremely thorough and include special causes as well as common causes for the error in question. This analysis should include individuals at several levels within the pharmacy department and leaders within the organization. This should include non-pharmacists as well, who can provide a different perspective regarding how the error might have occurred. A review of the relevant pharmacy and medical literature regarding how other pharmacies and institutions have dealt with this type of error should also be undertaken. When conducting a root cause analysis, the focus should be on answering the following questions: What exactly happened? Why did it happen? At which step(s) did the medication use process breakdown or did a failure occur? What happened immediately before the error occurred? What processes or systems underlie the cause of the error? What strategies can be implemented to help ensure the error does not occur again? Have there been any other “near-misses” similar to this type of medication error? What kind of assessment plan will be put in place to monitor the outcomes of any prevention technique that is implemented? Once the root cause of the problem is identified, an action plan, follow-up, and measurement strategy must be implemented to prevent further errors of this type. If a health care organization promotes a non-threatening attitude toward medication errors and stresses open communication, this will improve the chances of success of root cause analysis. Employees in an organization must believe that error reduction is everyone’s responsibility and should constantly be aware of potential weaknesses and vulnerability in the medication use process within their organization. Finally, some types of errors occur frequently but do not cause serious harm to a patient. Some organizations may not have the financial and manpower resources to conduct root cause analysis for these “minor” errors. In this scenario, aggregated root cause analysis or batch analysis may be the best solution. The process and framework for aggregate root cause analysis is similar to root cause analysis except a subset of similar errors is selected for comprehensive review and action planning. Finally, health care institutions are strongly encouraged to take a more proactive approach and focus a significant amount of time and resources on the prevention of medication errors in the future and not wait until an error actually occurs.

Even though most health care organizations are very familiar with root cause analysis, there are several common pitfalls that organizations make when conducting this type of analysis. ISMP has identified several of these pitfalls and some are discussed below⁶:

3

- 1) Focus of the analysis is too narrow - Many times health care professionals involved in root cause analysis only focus on a specific error in a particular setting. They fail to address the larger issue of the same error occurring in other parts of the institution or other patient care areas. Analysis of the error should include all potential areas of the health care organization where the error might occur. Tunnel-vision is considered bad in this situation.
- 2) Failure to carry out an action plan and measure success - Root cause analysis is considered to be successful only if it yields positive results and initiates change within the organization. The plans and systems recommended to prevent other similar errors must be realistic. This includes consideration of the organization's current economic and personnel resources available to carry out these recommendations. In addition, interventions must be monitored and measured to ensure that the processes put in place are actually working and not creating other types of medication errors. Interventions should be tested on a small scale to identify problems before they are "rolled-out" throughout the entire organization.
- 3) Failure to seek outside knowledge - Many times the team responsible for the root cause analysis becomes so focused on a specific error and the contributing factors internally, they forget to look outside for advice and information. It is a good bet that other organizations have experienced similar types of errors. Don't be afraid to reach out to other organizations and learn from what they have already tried. In addition, the medical and pharmacy literature provides a wealth of information on how other organizations have corrected similar errors including processes that have been tried and did not work. This type of investigation may save your organization a lot of time and money.
- 4) Skipping the time-line - In my opinion, this is the most crucial piece of a root cause analysis. The time-line or flow chart of events leading up to the error provides some of the most valuable information in the analysis. The time-line may help uncover unknown "gaps" in the medication use process and help provide an understanding of the relationships between points or actions in the time-line. This should be one of the first steps in any root cause analysis. It should be considered the framework for the analysis.
- 5) New policies and procedures will fix the problem - A common outcome of root cause analysis is the pervasive feeling that new policies and procedures will prevent future medication errors. Managers mistakenly feel that more steps and double checks in the medication use process will fix the problem. This is not always the case. New policies and procedures may complicate the process and lead to an entirely new set of medication errors. Therefore, before any new policy or procedure is put into place, make sure it has been carefully evaluated to assess its impact on workload, workflow, current technology, staffing, education needed, potential shortcuts and error traps. In some cases, elimination of a procedure may be the best course of action.
- 6) Failure to include at-risk behaviors in the analysis – The investigation of the behavioral components that potentially contributed to the error must be evaluated. Sometimes the analysis stops with the identification of an at-risk behavior as the cause of the error. This often leads to punitive action against those involved without evaluating why this behavior was occurring. These types of behaviors are discussed in greater detail in the next section.

At-Risk Behavior and Medication Errors

There are three classifications of behavior that can be involved in a medication error. The first type is human error. In this type of error, a health care professional did something other than what was intended. For example, a pharmacist placed simvastatin 10mg instead of 20mg in a prescription vial. The second type is reckless behavior. In this type of behavior, the pharmacist is intentionally taking a risk but does not necessarily want to harm the patient. A good example of this is when a pharmacist is so busy, he/she does not check to make sure the technician placed the correct medication in the patient's bottle. He/she just assumes the technician placed the correct medication in the bottle. The third is at-risk behavior. These behaviors can become a normal part of everyday life. They become so commonplace at the work site that the perception of their risk fades over time. Why does this risk fade? Because these risky behaviors have

4

not caused a problem so far, but beneath the surface a problem or medication error is just waiting for the right opportunity to surface. One example of an at-risk behavior is a pharmacist who always overrides all drug interaction alerts from a pharmacy's computer system. The pharmacist believes that 99% are false-alarms and feels he/she can rely on their own knowledge of drug-drug interactions. This is an at-risk behavior. Identifying and discouraging at-risk behaviors is the primary weapon in preventing this behavior. Listed below are some at-risk behaviors that should be addressed and corrected by health care organizations.

- 1) Rushed communication with a coworker working the next shift. This can lead to information being left-out or miscommunicated.
- 2) Failure to address an issue with a prescriber when the pharmacist feels that the drug is being inappropriately prescribed, dosed, or used. The idea of "just because the prescriber wrote it, my job is to fill it" can lead to serious medication errors.
- 3) Not reading the stock medication bottle label 3 times before counting it and dispensing it.
- 4) Answering the phone and taking care of walk-up customers at the same time the pharmacist is checking several prescriptions.
- 5) Having every patient "sign-away" their option to be counseled by a pharmacist because it saves the pharmacist time and aids his/her ability to keep "caught-up".
- 6) Not checking the patient's profile for allergies or other drug interactions because the drug being dispensed is a "safe" or "low-risk" drug.
- 7) Using "homemade" abbreviations (such as "Q46" for "every 4-6 hours" or "pp" for "as needed for pain") when taking oral prescriptions from a prescriber to increase speed and save time. This leads to confusion if another pharmacist needs to read and interpret this prescription at a later date.
- 8) Leaving several stock bottles of medication in the dispensing/counting area to save time running back and forth to the shelves for medication.
- 9) Leaving the keys in the safe that stores schedule II medications to speed up the dispensing process of these medications. (By doing this, the technicians do not have to always ask for the keys.)
- 10) Allowing technicians to counsel patients on simple things like: number of refills, storage in the refrigerator, and use of the medication.
- 11) Not regularly verifying important information with the customer to update their patient profile with new information such as new chronic diseases, new allergies, herbal product use, other medications they may be getting filled at other pharmacies, commonly used OTCs, etc.

These are just a few examples of at-risk behaviors of pharmacists. If you find yourself guilty of any of these behaviors, don't let them continue. Just because they have not led to an error yet, does not mean one may not occur in the future. Again, medication error prevention is everyone's responsibility and the reduction of at-risk behaviors will help reduce these errors in the future.

Proper Use of Oral Syringes⁷

Health care organizations still need to address the problem of using parenteral syringes to administer oral medications. The use of a parenteral syringe (one with a Luer lock that can be attached to a needleless intravenous (IV) tubing system) to administer oral medications is a recipe for disaster. Even though many health care professionals think it would be impossible for a nurse to administer an oral medication drawn-up into a parenteral syringe into an IV line, it still occurs far too frequently. It only takes one temporary memory lapse or distraction to cause this to occur. There are many reasons why the use of parenteral syringes for oral medications still occurs. **a)** The pharmacy department may forget to send up an oral syringe with an oral medication. **b)** The nursing unit may be temporarily out of stock of oral syringes or dosing cups. **c)** Due to overwork and large patient care loads, a nurse may grab a parenteral syringe to administer an oral medication to save time. **d)** A patient will not drink the medication from a dosing cup, so the nurse grabs a parenteral syringe to administer it to the patient.

How can we combat this problem? 1) Keep all clinical areas well-stocked with oral syringes. 2) Establish high-quality training programs that educate nurses and pharmacists on the dangers of using parenteral syringes for oral products and their potential consequences. 3) Use auxiliary labels on oral syringes that clearly state “For Oral Use Only”. Apply the label on the plunger or tip so the label must be removed prior to administration. 4) Include warnings on the Medication Administration Record (MAR) such as “Administer Only with an Oral Syringe”. 5) Dispense liquid medications from the pharmacy in oral syringes whenever possible.

Tough Economic Conditions = More Medication Errors

A survey of health care practitioners (primarily nurses and pharmacists) conducted by the Institute for Safe Medication Practice (ISMP) found that the recession has eroded medication safety⁸. The study participants felt that the primary cause is the reduction in staffing levels in order to cut costs. The results suggest that layoffs, staff attrition without replacement, reductions in benefits (time-off), and hiring less experienced staff are just a few contributing factors to a decrease in the medication safety process. Other factors identified by the study participants include staff morale, increased patient workloads, and fear of losing their job when reporting medication errors/misadventures are also contributing to a less safe medication use process. Twenty-five percent of nurse respondents indicated that reductions in staffing and increased patient loads have led to hurried drug administration practices and short-cuts in this process. Thirty-three percent of the respondents indicated that the use of clinical pharmacists on the patient care units has been reduced. Cost-cutting measures have pulled some of the clinical pharmacists back into more drug distribution and order entry roles, which reduces their availability for patient care and health professional consultation. Inventory control concerns were one specific example discussed in the study. Examples of this include: 1) The purchasing of multi-dose vials of medication instead of single-use vials or prefilled syringes in order to cut-costs. 2) A reduced availability of drug inventory on the nursing units due to reductions in purchasing. Some medications may now be stocked only centrally in the main pharmacy, increasing the amount of time before a patient can receive a needed dose. 3) New formulary restrictions and criteria have made some high-cost drugs unavailable and without proper additions to the formulary of therapeutic equivalents. Cost-containment is the new reality in health care organizations given the current economic climate. Community pharmacists are feeling the effects of tough economic conditions with reductions in technician help in the pharmacy. This leads to increased workloads for the pharmacist, more distractions, and less concentration on checking and filling medications. However, health care organizations should not jeopardize patient care and not sacrifice medication safety just to save money. This delicate balancing act of cost-control and patient safety should involve health care professionals responsible for direct patient care before decisions that might adversely affect patients are implemented.

Misuse of Symbols in the Medication Use Process

The use of symbols in the prescribing and dispensing of medication has no place in therapy. Many health care professionals like to use symbols as short-cuts or work-arounds to “speed-up” the mundane task of prescribing medications. The use of symbols can lead to all kinds of medication errors and misinterpretations. Pharmacists should never use symbols on oral prescriptions from physicians and should encourage physicians to do the same on written prescriptions. Symbols can be especially hard to read when orders or prescriptions are sent via fax machines with poor resolution or print quality and from carbon copies of hospital orders. Several symbols have the potential for causing medication errors. The greater than (>) or less than (<) symbols are two of the most misinterpreted symbols in health care. There is no doubt that sloppy handwriting may cause a greater than (>) symbol to be interpreted as a “7”. However, many times errors occur by health care professionals mixing the two up when interpreting a medication order. For example: The physician writes a note that the patient’s warfarin dose should be withheld if the INR >2.6. A

6

pharmacist or nurse could accidentally interpret this as: “Withhold the dose if the INR is less than 2.6”. It is just too easy to misinterpret the “<” and “<” symbols too often. In addition, a “<10” symbol with the number 10 may be mistaken for the number “40” if the handwriting is sloppy enough. Health care professionals should always write out the words “less than” or “greater than”. Some health care professionals like to use up and down arrows as shortcuts to indicate what needs to be done with dosing specific medications. These arrows can be confused with various number and letters. Common mistakes are arrows being misinterpreted as the number “1” or “7”. Other examples of symbols being misinterpreted are: “@” for a 2, “/” for a 1, “&” for a 2, “+” for a 4, and the hour symbol as in “q2^o” for a 20. In all these instances, these symbols should be written out in words.

Using Decimals Correctly

The inappropriate use of decimals is one of the most common sources of medication errors. This source of error also has the potential for the most harm. There are two basic rules that health care professionals need to follow regarding the use of decimals.

1) NEVER USE A TRAILING ZERO. What is a trailing zero? This is a zero that is added after a decimal point. For example: A physician writes a prescription for hydromorphone 1.0mg. There is no reason to add a zero after the decimal point or even have a decimal point. The drug should be written hydromorphone 1mg. When written as 1.0mg, it could be misread 10mg since the decimal point is often hard to see. The habit of using trailing zeros can often lead to 10-fold increases in dosing because the decimal point can be missed. In the example above, missing the decimal point could cause a fatal dose of hydromorphone to be prescribed to a patient.

2) ALWAYS USE A LEADING ZERO. A leading zero should be used in front of any decimal point. For example: When writing a prescription for lorazepam one-half milligram, the physician should write it lorazepam 0.5mg. If the physician writes a prescription for lorazepam as .5mg, it is very likely the decimal point will be missed and the patient could be given 5mg of lorazepam. A leading zero alerts health care professionals that there is a decimal point there in the medication order or prescription. By not using a leading zero, a 10-fold dosing error can occur as well. These two rules should be followed anytime doses or directions are used in practice. This includes calculation of doses, documentation in the patient’s chart or medication profile, nursing notes, prescriptions, etc. Make it your policy not to use decimals and zeros inappropriately and always be extra careful when other health care professionals do misuse them.

Faxed Prescriptions

There is no doubt that fax machines have made life easier for health care professionals. Faxing prescriptions to the pharmacy can help get the appropriate care to the patient quicker. However, fax machines can be a significant source of medication errors if they are not used properly. **1)** Always make sure you fax machine has adequate ink or toner. Medication errors can occur very easily if the print on the fax is faded or contains streaks from lack of toner/ink. **2)** Many fax machines will pick up the security features on prescription paper. For example: A physician faxes a prescription to the pharmacy for Augmentin 875mg. When the prescription is removed from the fax machine by the pharmacy, the words “void” are printed all over it. This is a security feature of the paper prescriptions coming through on the fax. This type of security feature on prescription paper is to prevent patients from photocopying prescriptions from physicians. However, the fax machine does not know this and will pick it up. This may make it hard for the pharmacist to read the prescription. **3)** Faxed prescriptions work well if the paper they are written on is free of lines. Physicians who write orders or patient instructions on notebook or “lined” paper make it hard for the person receiving the fax to read it clearly. **4)** Advise physicians to write prescriptions in the center of the piece of paper when faxing it to a pharmacy. This will ensure that all the information on the

7

prescription is transmitted by the fax machine. In addition, physicians should avoid writing near the edge of the paper. Again, to ensure that all of the information on the prescription is transmitted by the fax machine. **5)** Papers sent through a fax machine should be clear of any debris, paper particles, tears in the paper, dust, hole punchers, stickers, post-it notes, etc. This will make sure the information can be easily read and interpreted. **6)** Regular maintenance and cleaning should be conducted on all fax machines. Dust and paper particles can cause distortions that can lead to medication errors. Make sure the platen (roller in the fax machine) or the glass surface in the scanner are regularly cleaned and replaced as needed. Scratches on these surfaces will come across as distortions on the fax machine. **7)** If there is “phone noise” (black marks or streaks on the paper printed from the fax machine) the pharmacist should be very careful it does not interfere with the interpretation of the medication order on the fax. **8)** Bottom line: If something is not clear or illegible on a fax, take the extra time and orally verify the prescription or medication order with the physician.

Pharmacy Practice Tips for Reducing Medication Errors

- 1)** Never abbreviate any drug name when taking an oral prescription or order over the phone. Many pharmacists will use abbreviations for drug names and directions in order to “keep-up” with the fast pace of the person giving the prescription over the phone. If the oral prescription or order is being communicated too quickly, ask the person to please slow down and speak more clearly.
- 2)** If a nurse calling in an order prescription cannot read the strength, drug, directions or dose on a prescription from a physician, never use what is on the patient’s medication profile to clarify these issues. It is bad clinical practice for a nurse to say, “I cannot read what the strength is on this prescription from the physician, just give them the same strength as last time.” Always make the nurse confirm the information in question with the physician.
- 3)** When receiving an oral prescription, go to a quiet place in the pharmacy free from distractions. Also, tell your technicians never to interrupt you in the middle of taking an oral prescription. If you do get interrupted, have the person giving you the oral prescription over the phone start over.
- 4)** Don’t be afraid to speak-up. Many times a potential medication error is caught by a nurse’s aide, pharmacy technician, pharmacy intern, etc. and that person is afraid to question the authority of the nurse, pharmacist or physician. Even pharmacists are sometimes afraid to question the judgment of a physician or specialist. Any health care professional who truly has the patient’s best interest in mind will not be offended if a potential error is brought to their attention. Create a culture where medication error prevention is everyone’s responsibility and encourage all employees to speak-up when something does not look correct. Patient safety should be everyone’s priority and egos should be left out of the equation.

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The views contained in this program are not intended as legal advice. Pharmacists should always consult their own attorney or the Florida Board of Pharmacy when questions or issues regarding their practice of pharmacy arise.

Continuing Education Test Questions Using the Test Answer sheet on the last page, please circle the correct response for each question. A passing grade of 70% must be obtained to receive continuing education credit.

- 1) According to the study by Bates et al., most medication errors occur during which part of the medication use process?**
 - a) administration
 - b) transcription
 - c) dispensing
 - d) prescribing

- 2) Most medication errors are made by incompetent health care professionals with a history of multiple errors.**
 - a) true
 - b) false

- 3) Root cause analysis is conducted before a medication error has occurred and is used to identify potential errors before they occur.**
 - a) true
 - b) false

- 4) Which of the following are true regarding root cause analysis?**
 - a) It should always focus on individual performance issues.
 - b) It should only include pharmacists in the process.
 - c) It should include a review of relevant pharmacy and medical literature.
 - d) a and b
 - e) a, b, and c

- 5) Aggregate root cause analysis or batch analysis may be the best solution for frequent minor errors that do not cause serious harm to patients in organizations with limited financial and manpower resources.**
 - a) true
 - b) false

- 6) If a hospital promotes a non-threatening attitude with open communication towards medication errors, it will improve the chances of success of root cause analysis.**
 - a) true
 - b) false

- 7) At-risk behavior is when the pharmacist is intentionally taking a risk, but does not want to hurt the patient.**
 - a) true
 - b) false

- 8) Which of the following is a common pitfall of root cause analysis?**
 - a) Focus of the analysis is too narrow
 - b) Failure to carry out an action plan and measure success
 - c) New policies and procedures will fix the problem
 - d) b and c only
 - e) a, b and c

9

9) In the study conducted by Rupp et al, which of the following was the most common type of error seen in community pharmacies.

- a) significant drug interactions
- b) patient compliance issues
- c) prescription deficiencies
- d) prescription errors
- e) bad handwriting by the physician

10) Which of the following are at-risk behaviors that should be addressed and corrected by a pharmacy?

- a) Leaving several stock bottles of medication in the dispensing or counting area.
- b) Allowing pharmacy technicians to counsel patients on refills and storage.
- c) Using homemade abbreviations when taking oral prescriptions from prescribers.
- d) a and b only
- e) a, b and c

11) Which of the following are things a pharmacy department can do to prevent the misuse of parenteral syringes for oral medications?

- a) Keep all clinical areas well-stocked with oral syringes.
- b) Use auxiliary labels on oral syringes that state, "For Oral Use Only".
- c) Establish training programs that educate nurses and pharmacists on the dangers of using parenteral syringes for oral products.
- d) b and c only
- e) a, b and c

12) Which of the following are examples of how the recession could increase the potential for medication errors?

- a) The purchasing of multi-dose vials instead of single use vials.
- b) Reduced availability of drug inventory on the nursing units.
- c) New formulary restrictions and criteria have made some high-cost drugs unavailable.
- d) b and c only
- e) a, b, and c

13) The study participants in the ISMP study discussed in the "Tough Economic Conditions" section felt that _____ was the primary cause of eroding medication safety.

- a) inventory reduction strategies
- b) staff morale
- c) reduction in staffing levels
- d) reduction in benefits
- e) hiring less experienced staff

14) Which of the following drugs are *incorrectly* written?

- a) "digoxin .125mg"
- b) "atorvastatin 10.0mg"
- c) "alprazolam 0.25mg"
- d) a and b*
- e) b and c

10

15) Symbols on prescriptions can be especially hard to read when sent via fax machines.

- a) true b) false

16) Which of the following are true?

- a) “↑ dose to 10mg” is an appropriate way to write a dose on a prescription
b) The “@” symbol can sometimes be mistaken for a “2”.
c) It is appropriate to use “< “ and “>” symbols on medication orders
d) a and c
e) a, b, and c

17) Which of the following are true regarding faxed prescriptions?

- a) Advise physicians they can write information close to the edges of the paper.
b) Regular cleaning should be done on all fax machines.
c) Medication errors can occur if the fax machine is low on ink or toner.
d) b and c
e) a, b, and c

18) It is appropriate for the pharmacy to use the patient profile to clarify directions and dosing on a prescription if a nurse cannot read the physician’s handwriting when calling in an oral prescription.

- a) true b) false

19) Pharmacy technicians should not be afraid to speak-up when they detect a potential medication error.

- a) true b) false

20) Which of the following are true?

- a) Oral prescriptions should be taken in a quiet place in the pharmacy free from distractions.
b) If a patient will not take a liquid medication, a nurse should not grab a parental syringe and administer it.
c) When conducting a root cause analysis, a timeline of events must be done.
d) a and b
e) a, b and c

**Continuing Education Test Answer Sheet
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Medication Errors**

Florida Course #: 20-392745
C.E.U.s: 0.2 Contact Hours: 2 hours
Release date: 05/24/2013
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- 1) A B C D E
- 2) A B C D E
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- 13) A B C D E
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- 17) A B C D E
- 18) A B C D E
- 19) A B C D E
- 20) A B C D E

Name: _____

Email: _____

Address: _____

Phone Number: () _____ - _____

Florida Pharmacist License #

Program Evaluation:

Please use the following scale to answer the following questions:

- 1 – Strongly Disagree
- 2 – Moderately Disagree
- 3 – Slightly Disagree
- 4 – Slightly Agree
- 5 – Moderately Agree
- 6 – Strongly Agree

- _____ This program met learning objective 1.
- _____ This program met learning objective 2.
- _____ This program met learning objective 3.
- _____ This program met learning objective 4.
- _____ This program met learning objective 5.
- _____ This program met learning objective 6.
- _____ This program met learning objective 7.
- _____ This program met learning objective 8.
- _____ I learned a lot from this program.
- _____ The information in this program is applicable to my practice setting.

Any other comment about this program:

To receive credit for this program, please submit this completed answer sheet along with a check for payment of \$25.00 made out to Pharmacy Education Unlimited.

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