Lesson 9: Medication Errors

Lesson Objectives

At the end of this lesson, you will be able to:

• Identify the types of medication errors.
• Explain the importance of reporting medication errors.
• Report medication errors according to the appropriate program office.
• Describe how to evaluate medication errors by using a root cause analysis.

Medication Cycle

Thus far we have learned about the process of administering medication and how important the “5 Rights” are to making the process a safe one. Sometimes, when administering medication, people make mistakes.

What is a Medication error?

Mistakes can occur when the administrator fails to follow the step by step process for administering medication. Often the administrator becomes very familiar with the medication that people are receiving on a daily basis and begins to rely on their memory or to skip steps. This is very easy to do, but it is dangerous because mistakes in medication administration can harm people. So it is important to make sure that you follow the steps including the three checks of the “5 Rights” every time that you give a medication.

Sometimes even when people follow the steps, they may make a mistake. Mistakes in medication administration are called medication errors.

One way to think about medication errors is that they occur when one of the “5 Rights” is wrong. An example of a medication error is giving Melissa Sullivan, Megan Sullivan’s medication which is an error of person. Each of the “5 Rights” is associated with one or more types of medication errors.
The National Coordinating Council for Medication Error Reporting or NCC MERP has defined the types of medication errors. Defining the type of medication error helps identify ways to prevent that particular error from occurring again. It also gives us a consistent way to look at what are the weaknesses in the medication administration process for licensed sites using this medication administration program. This information can be used not only to improve medication administration practices in agencies and entities, but also to improve this course to better meet the needs of the people administering medication in the licensed sites.

Let’s look at the types of medication errors as derived from the definitions developed by the NCC MERP. The first set of error types that we will look at are directly related to one of the “5 Rights”.

Wrong person occurs when someone gets another person’s medication like in the example given earlier of Melissa receiving Megan’s medication.

Wrong medication occurs when there is an error related to the medication. There are three categories of medication errors under this type.

Wrong medication given. An example of this would be giving Zyrtec instead of Zyprexa or clonidine instead of clonipin, but this could occur any time that the wrong medication is pulled from the medication storage area and not just with a look alike or sound alike names.

Extra dose of medication given. This typically occurs when one staff person has given the medication without documenting it and another staff person gives it again.

Discontinued medication given. If the bottle of a medication that has been stopped is left in the medication storage area and someone administers it, then this is also a type of wrong medication.

Wrong dose - This occurs when the person gets too much or too little medication during a scheduled administration. If someone is given two tablets instead of the ordered one, this would be too much medication and the wrong dose. This can occur when there are changes in the strength of the medication.

An example would be if the person was ordered to take 20 mg of fluoxetine and the pharmacy fills it initially with 20 mg tablets to give one tablet as the dose and then refills it with 10 mg tablets to give two tablets as the dose. If the administrator then gives only one 10 mg tablet, the person will get too little medication.

Wrong time - This occurs when the administration is too early or too late as defined by the range of allowable administration time. Remember this is often defined as one hour before to one hour after the designation time of administration. Valproic acid due at 2 pm and given at 4 pm would be late. If it was given at 3 pm, then it would be given on time.
Wrong route - This occurs when a medication is put into the body in a different way from the one specified on the bottle. This is an unusual error, however it is important to pay attention to route because many medications may be given by different routes. One example of this would be putting ear drops in an eye. This type of error could result in eye damage and possibly loss of vision. Another example would be to give a vaginal suppository used to treat a yeast infection orally or by mouth.

In addition to the error types that are directly associated with the “5 Rights” there are some other types of errors that commonly occur and have the potential to impact the health of the person. Some, but not all of these are related to special instructions associated with medications.

Wrong form - This occurs when the person is given medication in a different type from the one prescribed. If a person that has swallowing problems is ordered to get liquid ibuprophen, but instead is given a pill, then this is the wrong form of the medication.

Wrong position - This occurs when the person is not placed correctly to receive the medication like placed with the affected ear up to get ear drops or not properly seated or lying down after receiving medication. Alendronate, a medication used to strengthen weak bones, requires that the person sit up for half an hour after receiving it so that they don’t develop stomach or esophageal ulcers. If they were allowed to lie down before the 30 minutes is up, then that would be an error in positioning.

Wrong technique or method - This occurs when a medication is prepared for administration improperly. Some medications are timed release and should not be crushed. Other medications that may be crushed cannot be put in certain vehicles like pudding or applesauce. In addition, some liquid medications settle to the bottom of the bottle and must be shaken prior to administration. Instructions for any of these methods of preparing medication will be provided on the pharmacy label. If such instructions are not provided, then it is not proper to prepare to administer that medication by crushing etc. as this results in an error.

The final type of error is the most common one, omission. This occurs when an administration fails to occur either at the time it was supposed to or later. If the administrator realizes in the afternoon that they forgot to give the morning dose of propranolol, then this is an omission.

The unavailability of medication can also create an error of omission. For example, if a medication has not been refilled and is not present to be given when due, then this is an omission. The importance of recognizing this is to identify the system error in how medication is refilled that lead to the unavailability. In this case, it is usually not the fault of a single person and often not the person that was responsible for the administration that was missed. It is however an opportunity to evaluate the system and prevent such an error from occurring again.
Some examples of missed medications may be misidentified as omissions. If a dose of digoxin is held because of a low heart rate or it is refused, then it is not an omission and should not be considered a medication error.

Sometimes people will be away from home unexpectedly when the medication is due and not have their medication with them. This occurs when there are traffic accidents, someone gets held up at an appointment, or the person is attending a special evening event.

If there is an order from the health care practitioner about what to do if the medication can’t be given because of such an event or if the health care practitioner is called and faxes an alternate order, then this is not an omission.

New prescriptions for medication that have not been received from the pharmacy can’t be given and should not be on the MAR until the new medication is received. The medication cannot be expected to be given until it is received, so even though there is an order for it, it is not an omission until the medication is received from the pharmacy.

Holding or not giving a morning medication because it is not supposed to be given for blood work or a medical procedure is also not an omission because there is an order from the health care practitioner to do so.

Sometimes when people visit with their family or friends they are not given their medication during the visit. This is not an omission either because the responsibility of giving the medication was that of the family or friend.

Instances where people that are self-administering don’t take their medication, even when staff may be present, are not omissions either because the responsibility of taking the medication is with the person that is self-administering. While this is a problem that may need to be addressed regarding the need for reminders or other strategies to promote self-administration, this is not a medication error and should not be treated as such.
In addition to situations that may be misidentified as medication errors, other mistakes like errors in documentation are not considered medication errors. These types of mistakes might lead to a medication error, however, they don’t have the impact of directly affecting the person and therefore are not errors.

Mistakes that are caught before the medication is administered are not errors. Rather these are sometimes referred to as variances. For example, while preparing to administer a medication, you pick up a discontinued bottle of that medication. If when completing your three checks you recognize that this is the old bottle that was never removed from the medication storage area and you remove it, then you will have prevented an error. This is not a medication error, but there may have been errors made prior to your discovery. This discovery should be communicated to the supervisor or the person responsible for medication management so that any impact of potential errors can be evaluated. One potential impact could be that if this was a seizure medication with a lower dose than the current dose, then if the person received this one their dose may be low and they could have a seizure. Finding the discontinued bottle by using the three checks shows how following the process every time can help prevent errors and harm.

The next three questions apply to the following scenario. Listen carefully to the scenario.

Chuck and Shannon were both assigned to give medications on their shift. They split the job and each took half of the people to administer medication to. Chuck started getting medications ready, but Shannon got called away to address an issue. When Shannon returned she started to prepare her medications. In the meantime knowing that Shannon was busy on the phone, Chuck started to administer some of her medication. He gave April her levothyroxine and then continued to the next person. Using the MAR Shannon prepared April’s levothyroxine and then administered it. She continued to give her other medications while Chuck went back to document his administrations. When Shannon returned to document her administrations, she discovered that Chuck had initialed the box for April’s levothyroxine. After discussion they realized that they had both given April a dose of levothyroxine.

Click Continue when you are ready to go to the first question.
Transcript

Reporting requirements may differ between types of licensed settings, however, the principles and reasons for reporting are the same. Discovery and reporting of medication errors should be seen as an opportunity to improve processes around medication management and administration. As we’ve seen previously, the identification of a variance or a mistake before the medication is given can prevent the mistake. As well the evaluation of each medication error can lead to the identification of weaknesses in medication administration processes and allow for their correction, thus preventing future errors.

One way of evaluating medication errors is called a Root Cause Analysis or RCA. There are many ways to do this, but the principles are the same. The goal is to identify why the medication error happened and to make changes in the current policies and procedures to prevent it from happening again. The focus is on understanding the occurrence: what happened, why it happened and how it happened. It is important to focus on the error itself and not only on the person committing it. Flaws in implementation of medication administration policies and procedures often result in the same error being made by multiple staff persons. Modifying policies and procedures to correct the flaw will help make medication administration safer for everyone.

There are multiple factors that may be involved in the occurrence of a medication error. Sometimes the assumption made is that the issue is a competency issue with the staff person that made the error when it really is a system error. Human error is one factor that may be involved in a medication error. Lack of competency in the task of administration may be seen in a staff person that has a pattern of repeated errors because of not following proper procedures. This should be approached as a competency issue.

However, more commonly system or process failures contribute to the error. System errors can involve the structural design of the medication administration procedures of a provider or technical issues involving the set up of the physical environment or use of equipment. Distractions like the phone or doorbell ringing, poor lighting, disorganized work environment, and lack of clear assignments are some examples of issues within the work environment that can lead to systemic causes of medication errors.

Measurements of medication errors are measures of reported errors. Reported errors offer two uses: information about what happened in order to fix the problem and a measure of assessment to identify whether or not the fix worked.

The NCC MERP recommends a non-punitive approach to medication errors as the medication administrator that knows that they will be punished for a medication error either by docking of pay, termination, or other disciplinary procedures are less likely to report errors.
Transcript

By not reporting errors, that information is lost and with it the opportunity to make procedural changes and prevent further errors. The focus should be on encouraging reporting of errors even though this may initially increase the counted number of errors. Organizations that do not promote reporting may have a low number of reported errors. However, they are still making errors even though they may not get reported. Each of these errors has the potential to harm someone. Making medication error reporting a quality goal without a punitive connection can help promote reporting as has been shown in other industries like air travel. The primary goal is safe administration of medication and robust reporting helps provide the information to be able to improve the process.

Root Cause Analysis

The principles of root cause analysis or RCA are to identify the factors that contribute to a problem and then identify potential solutions to prevent such a recurrence. Factors include things like the nature or magnitude of the problems, its location and/or timing. Establishment of a sequence of events from the actions to the result will provide the evidence of what lies at the root of the problem. Evaluation of these factors and the timeline leading from them to the event can help identify the actions, lack of action, behaviors, and conditions that may need to be modified. RCA must be done systematically with each event and based in documented evidence. Employing critical thinking to identify the appropriate questions including who, what, where, when, and why of the event will objectively identify the factors that contribute directly or indirectly to the event.

RCA may identify more than one root cause and more than one potential solution. In this case, the best solution should be implemented. This helps move the practices of improving medication administration from just reacting to things that happen to trying to identify and solve them before they occur and after a single event rather than multiple ones. The example of the person that identified the discontinued bottle of medication in the medication storage area and removed it shows how one can effectively identify problems before they cause an error.

Let’s look at how to use a simple RCA to evaluate an omission. In one RCA strategy there are four steps: 1) collect data, 2) identify factors that lead to the event, 3) root cause identification for each factor, 4) develop recommendations and implementation strategies for change. Collecting the data is gathering information about the event and what happened. Causal factor identification includes looking at what factors may have lead to the event. Then root cause identification looks at the causes underlying those factors. The root cause then leads to identification of ways to modify processes in order to prevent the event from reoccurring.

Let’s look at an example.

Step 1: Gathering data: John missed his morning dose of thyroid medicine. When Joe, his staff person, went to get the thyroid medicine from the medication storage area, he pulled out an empty bottle. He searched through the area, but did not find any of John’s thyroid medication. This was an omission because he failed to give the medication.
Step 2: Identification of causal factors: Joe called his supervisor who tried to figure out what happened. The supervisor asked the following questions:

- When was the last dose given and documented?
- Who administered the last dose?
- What is the procedure for refilling and getting prescriptions?
- Was the prescription reordered? Was it discontinued?
- Was the prescription not picked up or delivered from the pharmacy?
- Was the medication available from the pharmacy?

The supervisor identified that the nurse that comes to the house periodically is responsible for reordering medications. She was last at the house two weeks prior and the medication couldn’t be refilled at that time because it was not close enough to the refill date. She usually comes to each house on a weekly basis, but was out on vacation last week.

Step 3: Root cause - The procedure for reordering medication is dependent on a single individual without any back-up system.

Step 4: Recommendations and implementation

There are a number of options that you could look at.

- A back-up person could be identified to cover for the nurse when she is out.
- Most insurance pays for medication to be refilled about week in advance of completing the previous prescription. Therefore, each of the direct care staff could be responsible to alert the nurse and the supervisor when there is a seven day supply left so that the medication can be reordered.
- The direct care staff that is working when there is a seven day supply left could be responsible for reordering medication. The supervisor would be responsible to double check that the medication is being ordered in a timely fashion.

RCA may be done in multiple different manners and called different things. Some strategies use asking five “why” questions rather than the who, what, when, where, why that is presented above. Different providers may approach this differently. The importance of doing this is not the structure of the review or the terminology used, but the implementation of a review that leads to the identification of reasons that medication errors occur and finding ways to prevent them. It is also important to recognize that you have a crucial role in this process not only by providing the information about what happened, but also to help problem solve about changes that might prevent the occurrence in the future.

Reporting Requirements

All providers working within a licensed setting that uses this medication administration program are required to report medication errors. However, different settings may have different expectations and structures for reporting. It is important to be familiar with the reporting structure that must be used. Each of the licensed settings may use different approaches to medication error reporting. Let’s review how the program offices approach this.
For the Office of Developmental Programs, providers report medication errors electronically. The definitions of medication errors used in the ODP system were developed from a national medication error reporting program with the goal of using the information from medication errors to improve the medication administration process and make it safer.

While you may not be the person responsible for electronically entering the information about medication errors, as a medication administrator you will be providing information about what happened when an error is made.

The following slides outline the information that needs to be reported and some of the common situations and reasons that may have led to the error. The questions about medication errors are designed to lead you through the steps of a root cause analysis. This aids in identifying the cause of the error and potential solutions for the prevention of future similar errors.

The next set of slides review the information that is reported to the Office of Developmental Programs when a medication error occurs. Keep in mind that the purpose of reporting is to have a way to look at what occurred and why.

Basic information such as the date, time, and what type of medication error occurred, staff position of the person giving medication, name of the medication and if the error occurred multiple times before it was discovered is reported.

Why the error occurred is also reported. The reason is chosen from a list and there could be multiple reasons.

Take a moment to review the reasons and click Continue when you are finished.

The response to the error is also reported. Possible responses include:

- Contacted PCP which is the health care practitioner
- Contacted program supervisor
- Observed for side effects
- Called poison control
- Discovered too late to do anything
- ER visit
- Hospitalization
- Had blood level of medication checked

This slide outlines potential agency systemic responses to prevent the recurrence of this type of error. Take a moment to review these options and click Continue when you are finished.
There is also an area for additional required information which includes the following:

- Name of the unique identifier of the staff involved
- Was the staff involved working longer than their regular work hours at the time of the error?
- Length of time the staff involved has been giving medications in years.
- Number of medications this person receives on a daily basis. Do not include medications that are taken on an episodic basis.
- Number of people, including this person, that the staff involved have to give medication to around the same time as the error occurred.

Here is some additional information.

For the Office of Children, Youth and Families, medication errors are also reported electronically.

If you work in an assisted living or personal care home setting, each of these have their own incident forms to report medication errors. The definitions of medication errors for these programs may differ based on regulation. Click on the button to view the incident form relevant to either assisted living or personal care home settings. Remember that the other program offices use an electronic system rather than incident forms to report medication errors.

Remember, whatever setting you work in, the information about what occurred with the medication error is important to discover so that your medication administration processes can be improved.

**Summary**

This lesson about medication errors covered key points that included:

- Medication errors are an opportunity to learn and improve the medication administration process.
- Root cause analysis identifies factors that contribute to errors and potential solutions to prevent recurrence.
- Information to gather to report medication errors.

**Next Step**

Now that you have completed the lesson, it is time to take the quiz. Return to where you launched this lesson to take the quiz. You may need to refresh the screen for the quiz to become available.