Medication Orders and Prescriptions

Unit: Prescription Processing

Problem Area: Hospital, Long-Term Care, Home Care, and Nuclear Pharmacy

Lesson: Medication Orders and Prescriptions

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Differentiate between medication orders and prescriptions.**
2. **Describe the components of a medication administration record.**

Resources.

The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

Aiken, Cheryl and Robert J. Anderson. *Certification Exam Review for Pharmacy Technicians*, 4th ed. Paradigm, 2016.

Ballington, Don A., and Robert J. Anderson. *Pharmacy Practice for Technicians*, 5th ed. Paradigm, 2015.

Ballington, Don A., Mary M. Laughlin, and Skye McKennon, *Pharmacology for Technicians*, 6th ed. Paradigm, 2016.

Neumiller, Joshua J., et al. *Pharmacy Technician Principles and Practice*, 4th ed. Elsevier, 2016.

Olsen, June L., Anthony P. Giangrasso, and Dolores Shrimpton, *Medical Dosage Calculations,* 11th ed. Pearson, 2015.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- biological agents
- chemotherapy
- community pharmacy
- generic medication
- institutional pharmacy
- medication order
- ophthalmic
- otic
- parenteral
- prescription
- PRN

Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *A physician writes a medication order for a young boy with a seizure disorder. The order is for a drug called primidone. The pharmacy technician misreads the physician's handwriting and the prescription is filled with a medication called prednisone. The boy takes the incorrect medicine for four months and develops diabetes. The diabetes is not recognized and he goes into a diabetic coma and dies. Medication administration is a complex multistep process that includes prescribing, translating, dispensing, administering drugs, and monitoring patient response. An error can happen at any step. According to the Institute of Medicine, medication errors injure 1.5 million Americans each year. Knowing what medications your doctor is prescribing for you can help to prevent these errors from happening.*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Differentiate between medication orders and prescriptions.

Anticipated Problem: What is the difference between a medication order and a prescription?

I. Medication orders and prescriptions

A. In the ***community pharmacy***, a pharmacy that deals directly with people in the local area, medications are dispensed directly to the patient after a valid ***prescription***, a physician's order for the preparation and administration of a drug or device for a patient, is presented to the pharmacy. Community pharmacies are commonly referred to as retail pharmacies. In the ***institutional pharmacy***, or hospital setting, ***medication orders***, written directions by a prescribing practitioner for a specific medication to be administered to an individual, are used in place of prescriptions.

1. Prescriptions are used in the outpatient setting and medication orders are used in the inpatient setting. Prescription medications are directly dispensed to the patient. The patient takes the medication home with them and follows the directions on the medicine label. Medication orders are processed differently in the hospital than in the community pharmacy. When a physician visits a patient in the health care facility, the order is written on a physicians order sheet and is placed in the patient's chart. The medication orders are filled and delivered to the nursing unit where nursing personnel dispense the medications to the patient, in a hospital, nursing home, or other health care facility.
2. Most medications dispensed in the typical community pharmacy are oral medications or pre-packaged specialty medications, such as inhaled drugs for the lungs, ***ophthalmic***, for the eye, ***otic***, for the ear, and topical for the skin. The institutional pharmacy dispenses not only these types of medication but also ***parenteral***, injecting directly into the body, ***biological agents***, a substance that is made from a living organism or its products, and potentially hazardous ***chemotherapy***, anti cancer, medications.
3. Prescriptions are for a definable amount of medication, whereas medication orders will continue to be dispensed until the order is changed or the patient is discharged from the health care facility.

4. Prescription and medication orders can be handwritten, typed, verbal or entered into the computer system program and submitted to the pharmacy by electronic means. Computerized physician order entry (CPOE) is a new technology that allows the medication order to be sent electronically to the pharmacy using a computer or a mobile device. Medication orders fall into four categories:
    a. stat order: a stat order needs to be filled within minutes. A stat order is generally used on an emergency basis and the medication needs to be administered as soon as possible but only one time.
    b. single order: the single order means to administer the medication at a certain time but only one time.
    c. standing order: the standing order is a prewritten medication order indicating that a medication is to be given for a specified number of doses.
    d. ***PRN***: PRN indicates an "as needed" medication. This allows a medical professional to judge when a medication should be administered based on the patient's need and when it can be safely administered.
5. In the institutional setting the pharmacy more freely substitutes a ***generic medication***, copies of brand name drugs that have the same dosage, use, effects, and safety as the original drug, to appropriately fill the medication order. Brand name drugs are only dispensed if no generic drug is available. In the community pharmacy setting the pharmacist must interpret how the prescription was written by the health care provider. The prescriber can authorize a generic drug by writing or checking a box that says "substitution permitted." If the prescriber writes or checks a box that says "dispense as written" (DAW), a generic equivalent is not permitted.

B. Preparation of Medication Order:
1. Identify the required elements of a medication order.
    a. Date and time the order was written
    b. Medication name, dosage strength, dosage form, amount
    c. Route, frequency, and duration of administration
    d. Indications for use
    e. Signature of practitioner
2. Medication order is entered into the patient's medication profile.
3. Medication is supplied to the nursing unit by various routes depending on the facilities system:
    a. Unit dose system: Medications are prepackaged for a single administration. Each patient on the nursing unit has a designated removable drawer of medication that is delivered to the unit in a moveable cart called the unit dose cart. Commonly a 24 hour supply is provided. The pharmacy technician fills the necessary medications into each patient drawer each morning.
    b. Automated dispensing systems: This system electronically controls and tracks the dispensing of unit doses for each patient based on the patient's individual medication profile. The dispensing machines allow medicines to

be stored on the unit and to be more conveniently accessed by the staff. These dispensing systems require continual filling and updating which are the duties of the pharmacy technicians.

4. Medication is recorded on the patient's medication administration record (MAR).

C. Preparation of Prescription Medications:

1. Identify the required elements of a prescription.
   a. Patient name and date of birth
   b. Date the prescription was written
   c. Prescriber name, address, telephone number
   d. Medication name, dosage strength, dosage form, amount
   e. Route of administration
   f. Instructions to the pharmacist in dispensing the medication
   g. Directions for the patient to follow
   h. Signature of prescriber
2. Updating the patient profile.
3. Review and translation of the prescription.
4. Enter prescription into patient profile.
5. Calculating quantities of medication.
6. Counting out proper quantity of medication.
7. Selecting appropriate container.
8. Placing label on container.
9. Pharmacist completes final check.
10. Placed in bin for patient pick up.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–A to compare and contrast a prescription and a medication order.*

Objective 2: Describe the components of a medication administration record.

Anticipated Problem: What are the components of a medication administration record?

II. The components of a medication administration record

A. When a nurse administers any medication it is recorded in the patient's medical record on a form called a medication administration record (MAR). The report serves as a legal record of all of the medications that have been administered to a patient. The MAR becomes part of a patient's permanent medical record. The medications listed on the MAR are transcribed from the physician's medication order. Transcribing medications onto a MAR may be completed by the pharmacy or sometimes by the patient's nurse.

B. The MAR provides uniform guidelines for charting medications and treatments. The formats and information on the MAR may vary somewhat from facility to facility but generally consists of a column which lists the medication, a start and stop date, time and date medication is taken, and the initials of the person administering the medication. Each record is patient specific and should contain at least the following information:

1. Patient's name, date of birth, hospital identification number
2. Name of prescribing physician
3. Allergies
4. Patient's general diagnosis
5. Name and dosage form of all medications
6. Dose or quantity to be taken
7. Frequency or times of administration
8. Route of administration
9. Date and time given
10. Medication order number
11. Any special instructions, directions, or precautions

C. A separate listing in the MAR is kept for PRN, or as needed medications. The conditions for which the medication may be given and the maximum or stop dosage must be included on the MAR.

D. The MAR must be completed and initialed immediately after the medication is administered by the nurse. Each MAR has a section that contains the full signature and title of each individual who initials the MAR.

E. Never erase or use any kind of liquid eraser on a MAR. If an error is made you must draw a single line through the error then initial and date it.

F. Technology has been developed to help nurses document the administration of medications accurately and quickly. An electronic medication administration record (eMAR) documents the administration time of each drug to each patient, often using bar code technology. The medication orders are entered into handheld computer devices by the physician at the patient's bedside. Patients wear wristbands with bar codes that identify them and link them to their corresponding eMAR. Once a physician inputs the order, it is electronically transmitted to the hospital pharmacy. The order is filled in the pharmacy and then sent to the patient care unit. A handheld bar code reader registers each medication, and the software verifies the correct medication was ordered, administered on time, measured in the correct dosage, and documents the actual administration of the medication.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–B to review the components of a MAR. Have students visit the Quizlet website at https://www.quizlet.com and search for medication administration records. Have students complete the learning games, flashcards, and the test. Students should turn the Quizlet documents into the instructor. Assign LS–A.*

Review/Summary. Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.

Application. Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

Evaluation. Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. c
2. f
3. b
4. a
5. d
6. e

Part Two: Completion

1. patient
2. hospital
3. as needed
4. single
5. generic
6. chemotherapy

Part Three: True/False

1. T
2. F
3. T
4. F
5. T
6. T

Sample Test

Name _____

Medication Orders and Prescriptions

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. ophthalmic
b. generic medication
c. parenteral
d. biological agents
e. otic
f. medication order

_____1. Injecting directly into the body

_____2. Written directions by a prescribing practitioner for a specific medication to be administered to an individual

_____3. Copies of brand name drugs that have the same dosage, use, effects, and safety as the original drug

_____4. For the eye

_____5. A substance that is made from a living organism or its products

_____6. For the ear

Part Two: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. Prescription medications are directly dispensed to the _____.
2. Institutional pharmacies are found in the _____.
3. PRN indicates an _____ medication.

4. A unit dose system is when medications are prepackaged for a _____ administration.

5. If the prescriber writes or checks a box that says “dispense as written” (DAW), a _____ equivalent is not permitted.

6. Anti cancer medications are called _____ drugs.

Part Three: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. Prescriptions are for a definable amount of medication.

_____2. A standing order needs to be filled within minutes.

_____3. Unit dose medications are prepackaged for a single administration.

_____4. It is acceptable to erase or use any kind of liquid eraser on a MAR.

_____5. Patients wear wristbands with bar codes that identify them and link them to their corresponding eMAR.

_____6. A separate listing in the MAR is kept for PRN, or as needed medications.

PRESCRIPTION VS. MEDICATION ORDER

Prescription	Medication Order
Outpatient Setting	Inpatient Setting
Dispensed directly to patient	Delivered to the nursing unit where nursing personnel dispense to patient
Mostly dispense oral medications or pre-packaged specialty medications	Dispense oral medications, pre-packaged specialty medications, parenteral, biological agents, and chemotherapy medications
Definable amount of medication prescribed	Continued until the order is changed or the patient is discharged
Can be handwritten, typed, verbal or entered into the computer system program and submitted to the pharmacy by electronic means.	Can be handwritten, typed, verbal or entered into the computer system program and submitted to the pharmacy by electronic means.
Must contain the phrase substitution permitted to dispense generic medication	Freely substitute generic medication
Must verify all parts of prescription for accuracy	Must verify all parts of medication order for accuracy

VM–B

MEDICATION ADMINISTRATION RECORD (MAR)

Patient Name: **Physician:**

Hospital Number: **Diagnosis:**

Gender: **Allergies:**

Age:

Order Number	Medication	Start	Stop	Hours	Dates

PRN MEDICATIONS

Date	Hour	Initials	Medication	Reason		Staff Initials	Staff Signature
					1		
					2		
					3		
					4		

LS–A

Name _____

Medication Administration Record (MAR)

Purpose

The purpose of this activity is to demonstrate how to properly document all prescribed medications on a medication administration record.

Objective(s)

1. Identify the components of a medication administration record.
2. Interpret the components of a medication administration record.
3. Recognize how proper medication administration documentation helps to ensure the safety of patients during medication administration.

Materials

- Sample medication administration record
- Sample chart
- Questions
- Pen or pencil

Procedure

1. Obtain a sample MAR from your teacher.
2. Review the information listed on the MAR.
3. Complete the chart using the information listed on the MAR.
4. Answer the questions using the information listed on the MAR.
5. Turn your chart and questions into your instructor.
6. Participate in a discussion on how to avoid errors when completing a MAR.

Sample Medication Administration Record (MAR)

Patient Name: John Bell

Hospital Number: 100756

Gender: M

Age: 55

Physician: Dr. Mary Jacobs

Diagnosis: Heart Disease

Allergies: Peanuts

Order Number	Medication	Start	Stop	Hours	Dates	
					10/12	10/13
1456	Pepcid 20mg IV every 12 hours for 7 days begins at 1800h	10/12	10/19	0600 1800	 SG	JY SG
1457	Digoxin 0.125mg by mouth daily	10/12	10/18	0900	JY	JY
1458	Lotensin 20mg by mouth every 12 hours	10/12	10/18	0900 2100	JY SG	JY SG
1459	Ticlid 250mg by mouth daily	10/12	10/18	0900	JY	JY
1460	Xanax 0.5mg by mouth at bedtime	10/12	10/18	2100	SG	SG
1461	Lasix 20mg by mouth daily	10/12	10/18	0900	JY	JY

PRN MEDICATIONS

Date	Hour	Initials	Medication	Reason		Staff Initials	Staff Signature
10/12	0900	MC	Tylenol 650mg by mouth	Pain	**1**	MC	Marie Connors R.N.
					2	SG	Sally Goode R.N.
					3	JY	James Young R.N.
					4		

Complete the following chart using the information on the above MAR.

Name of Drug	Dose	Route of Administration	Time of Administration

Answer the following question using the information on the above MAR.

1. Identify the drugs and their doses administered at 9:00am.

2. Identify the drugs and their doses administered at 9:00pm.

3. Who administered the Ticlid on 10/13?

4. What is the route of administration for Pepcid?

5. What is the time of administration for Pepcid?

6. Identify the name, dosage, and time of administration for the prn medication.

Medication Administration Record (MAR)

Name of Drug	Dose	Route of Administration	Time of Administration
Pepcid	20mg	IV	0600 and 1800
Digoxin	0.125mg	By mouth	0900
Lotensin	20mg	By mouth	0900 and 2100
Ticlid	250mg	By mouth	0900
Xanax	0.5mg	By mouth	2100
Lasix	20mg	By mouth	0900

1. Digoxin 0.125mg, Lotensin 20mg, Ticlid 250mg, Lasix 20mg
2. Lotensin 20mg, Xanax 0.5mg
3. James Young R.N.
4. IV intravenous
5. 0600 and 1800
6. Tylenol 650mg at 0900