

Introduction to Pharmacology

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The Administration of Drugs

Nurse Practice Act

- Defines scope
- Role of the LPN

The Six Rights

- *Right* patient
- *Right* drug
- *Right* dose
- *Right* route
- *Right* time
- *Right* documentation

Right Patient

- Make it a habit to check your Patient's ID every time you administer a medication or perform a procedure
- Two identifiers are recommended
- Some identifiers may be the patient's name, birth date or medical record number
- Do Not ask a patient if they are Mr. so & so
- Ask What is your name?

Right Drug

- Facility policy will vary in regards to verifying medication between MAR & the Physician's orders
- You will check your medication label to your MAR three times
- You always perform your 3 checks
 - Before removal from the cart
 - Before you place the medication in the cup
 - Before you administer the medication to the patient

Right Drug

- If you are unsure of a medication order verify it with the Physician's orders
- If the order is questionable, Call the Physician & clarify the order
- Never, Never Assume
- If your patient questions a medication, Stop & Check the MAR
- Drug names may be similar in sound & spelling

Right Dose

- It is your responsibility to know the appropriate dose of the medication you are administering
- Compare the dose on the package to the MAR
- If substitute is to be administered, be sure the appropriate dose is given
- Any questionable dose needs to be clarified
- Verify conversions & math

Right route

- The order designates the route of administration
- Changing the route changes the rate of absorption
- If you are unable to administer the medication by a specific route you must call the Physician to change the route
- Some medications form can be altered while other medications can not.

Right Time

- The frequency medication is administered varies with the medication
- The Physician's order will note the frequency but you must also have knowledge of how often the medication is administered
- Most facilities have standardized times, i.e. BID may be at 10AM & 6PM
- You have ½ hour before the scheduled time & ½ hour after the scheduled time to administer medication
- There are times due to patient condition medications are held
- Most facilities circle the medication if it is held

Right Documentation

- After administration of medication, the nurse must immediately document on the MAR
- PRN medication requires follow up of response
- Documentation of site is required for some medications
- Refusal of medication must be documented according to facility policy
- If you do not document the medication given then it is an error

Drug Errors

- Occurrence causing a patient to receive:
 - The wrong dose
 - The wrong drug
 - A drug by the wrong route
 - A drug given at the incorrect time
 - A drug can be given to the wrong patient
 - A drug can be documented improperly resulting in a medication error

Drug Error

- ***The first responsibility of the nurse is to check the patient's condition & report immediately***
- Reporting a medication error is the professional responsibility of the nurse
- The 6 Right's are in place to prevent medication errors
- Errors occur when one or more of the Right's are not followed

Drug Errors

- Errors may occur at various points in the process
 - The Physician
 - During transcription
 - The Pharmacy
 - During administration
- ***The nurse is the last line of defense***

Drug Errors

- Ways to avoid drug errors:
 - Knowledge of medication
 - Utilize resources when you are not familiar with medications, i.e. PDR, medication book, pharmacy
 - Clarify any questionable orders
 - Always recheck math calculations with formulas
 - If a patient questions a medication, LISTEN & CLARIFY
 - Concentrate on one task at a time

The Medication Order

- Primary Health Care Provider writes order
- Common orders
 - Standing order
 - Single order
 - PRN order
 - STAT order
 - Verbal order
- Once-a-week drugs

Medication orders

✘ Standing order

- ✘ This type of order is given when the patient is to receive the drug as prescribed on a regular basis
- ✘ The drug is given until it is discontinued by prescriber or course of treatment has completed
 - ✘ Example: Lanoxin 0.25mg po QD

✘ Single order

- ✘ An order to administer the drug one time only
 - ✘ Example: Valium 10 mg po on call to procedure

✘ PRN order

- ✘ An order to administer medication on an as needed basis
 - ✘ Example: Demerol 100mg IM q4h prn for pain

Medication orders

- Stat Order:
 - A one time order to be given now
 - Given in an emergency situation
 - May be given verbal but prescriber must write the order as soon as the emergency is over
 - Example: Morphine 10mg IV Stat
- Once a Week order
 - Some drugs are given once per week or even twice a month
 - Example: Fosamax 35mg po every Wednesday

Medication Orders

- Verbal Orders:
 - Verbal orders are discouraged but there are times when they are necessary
 - They must contain all the same information that a written order contains
 - Always read back the order to the prescriber to verify & avoid mistake during transcribing
 - the nurse will write the order & note that it is a telephone or verbal order followed by the prescribers name & nurses signature
 - The prescriber must sign the order ASAP

Medication orders

- A nurse must have knowledge
 - interpreting an order
 - medical terminology & abbreviations
- The order must include the following components:
 - Date written & time encouraged
 - Name of drug & dose
 - Route of administration
 - Frequency of administration
 - Any special instructions, i.e. rate or reason with prn
 - Physician's signature

Transcription of order

- Once the medication is verified it must be transcribed onto a Kardex & MAR
- Verify order by signing your name & date on the side of the prescriber's order
- Be sure to clarify any questionable orders
- Send by fax or carrier to pharmacy to fill medication orders

Scheduling of Medication

- Medication Schedule
 - Medication ordered q12 hours must be spaced 12 hours apart
 - If ordered daily, the medication is given the same time daily (time of day may be dependent on medication)
 - BID, TID, QID are scheduled according to facility schedule policy

Drug Dispensing Systems

- Computerized dispensing system
- Unit dose system
- Floor stock
- Narcotic control systems
 - Locked system
 - Drugs counted every shift
 - Special sign out systems



FIGURE 2-4. An automated medication system.

Documents of Drug Administration

- Kardex
 - Form that contains all pertinent patient treatment orders
 - Name—dx—allergies—admit date—
treatments—labs—diagnostic tests
 - Some kardexs contain medications while others do not

Documents of Drug Administration

- Medication Administration Record
 - Types vary; computer-generated or hand written
 - All MAR contain same important information:
 - Patient name—drug—dose—route—frequency—time
 - Nurse is responsible for checking the MAR against the Physician's order in the chart
 - Secretary will transcribe but it is the nurse's responsibility to verify medication is correctly transcribed
 - Once the medication is administered, the nurse must document on the MAR

**STANDING PHYSICIAN'S ORDERS
TELEMETRY PROTOCOL**

Form # PHY 259

DATE	TIME	TELEMETRY UNIT
7/20/03	0800	1. Cardiac Monitor. Rhythm strips to progress note on admission and with any change in rhythm.
		2. Diet:
		3. Activity:
		4. Vital signs q4hrs for the 1 st 24 hrs, then q shift (includes BP, HR, RR, Temp); unless Otherwise indicated.
		5. Intake and output:
		6. Oxygen _____ L/M.
		7. <input type="checkbox"/> Daily Weights.
		8. Saline Lock if no IV ordered.
		9. Atropine and Lidocaine procedures.
		10. Stat portable CXR unless otherwise ordered.
		11. If patient is not a cardiac patient, check with attending physician regarding the need for serial EKG's and cardiac enzymes/isoenzymes.
		12. EKG on admission and daily x 2 (total of 3).
		13. Labs: a. STAT: CBC, PT, PTT
		b. Troponin x 3 (#1 stat on admission. #2 - 4 hrs after 1 st , #3 - 8 hrs after 1 st)
		c. Chem profile in AM after admission.
		d. Urinalysis
		14. If 3 sets of troponin are negative, and patient is free of arrhythmia, notify MD for transfer order.
		15. Check box below if CPK desired.
		<input type="checkbox"/> Admission
		<input type="checkbox"/> 24 Hours
		16. Medication:
		a. Surfak 240 mg po HS PRN
		b. Tylenol 650 mg po q 4 hours PRN
		c. NTG 1/150 SL q 5 min x 3, PRN chest pain and systolic BP; 90; call if no relief.
		17. <input type="checkbox"/> Cardiac Rehab
		18. Baby ASA 81mg Tpo qd.
		19. Toprol XL 50mg Tpo qd.
		20. NTG paste 1/2" apply to skin q 6 ⁰
		SIGNATURE: <i>V.O.</i> Dr. Cardiologist / RN/LPN
		Date: 7/20/03

2003

START DATE	ROUTINE MEDICATION MEDICATION - DOSE - ROUTE - SCHEDULE	HOUR	7/26	27	28	29	30	31	8/1	2	3
7/26	Saline Lock	0800									
	Flush BID	2000									
7/26	Baby ASA 81mg ^{TPO}	0800									
7/26	Toprol XL 50mg ^{TPO}	1200									
7/26	NTB paste 1/2" ^{coll}	0600									
	apply to skin q6°	off									
		on									
		1200									
		off									
		on									
		1800									
		off									
		on									
		2400									
		off									

Medication Administration Record

Drug label

Drug Label

Brand Name/Trade Name

- usually capitalized and written in bold print
- first name written on the label
- trade name is always followed by the ® registration symbol
- different manufacturers market the same medication under different trade names.

Drug label

Generic Name

- is the official name of the drug
- each drug has only *one* generic name
- name appears directly under the trade name
- usually in smaller or different type letters
- prescriber may order a pt's medication by generic or trade name
- nurses need to be familiar with both names and cross-check references as needed.
- Occasionally, only the generic name will appear on the label.

Drug label

Dose

- indicates the amount or weight of the med that is ordered

Route

- indicate how the drug is to be administered.

Total Amount

- the total volume of the medication i.e. bottle containing 50 capsules.

Drug label

Form

- indicates how the drug is supplied i.e. tablets, ointments, liquids, suppositories

Directions

- specific instructions regarding medication is included

NDC Number

- required by federal law
- must appear on label
- each medication has it's own
- starts with letters NDC followed by 3 numbers

Drug label

Manufacturer

- company that made the medication

Expiration date:

- located on container,
- month & year
- very important to note

Lot number

- required by federal law,
- refers to the batch from which the medication came
- used during recalls

NDC 0777-0869-02
100 PULVULES® No. 402

KEFLEX®

CEPHALEXIN CAPSULES, USP

250 mg

CAUTION—Federal (U.S.A.) law prohibits dispensing without prescription.
Keep Tightly Closed

Store at Controlled Room Temperature
59° to 86°F (15° to 30°C)
NVL 3473 DPX

Manufactured by
DISTA PRODUCTS CO.
a Division of Eli Lilly Industries, Inc.
Caroline, Puerto Rico 00980
a Subsidiary of Eli Lilly and Company
Indianapolis, IN, U.S.A.
Expiration Date/Control No.

Usual Adult Dose—One PULVULE every 6 hours. For more severe infections, dose may be increased, not to exceed 4 g a day. See literature.
Each PULVULE contains Cephalexin Monohydrate equivalent to 250 mg Cephalexin.
Dispense in a tight container.

1. Trade nameKeflex
2. Generic name.....cephalexin
3. Dosage strength.....250 mg
4. Formcapsules
5. Amount.....100
6. Directions.....Keep tightly closed. Store at controlled room temperature 59° to 86° F (15° to 30° C).
7. NDC number.....0777-0869-02
8. Manufacturer.....DISTA