Methods of Administration

Medication Administration
Interpreting Medication Orders
MAR & Distribution Systems

Calhoun Community College

Let's Review

- 1.25 L = _____ mL
- 2.5 g = _____ mg
- 0.125 mg = _____ mcg
- 2.5 tsp = _____ mL
- 3 oz = _____ mL

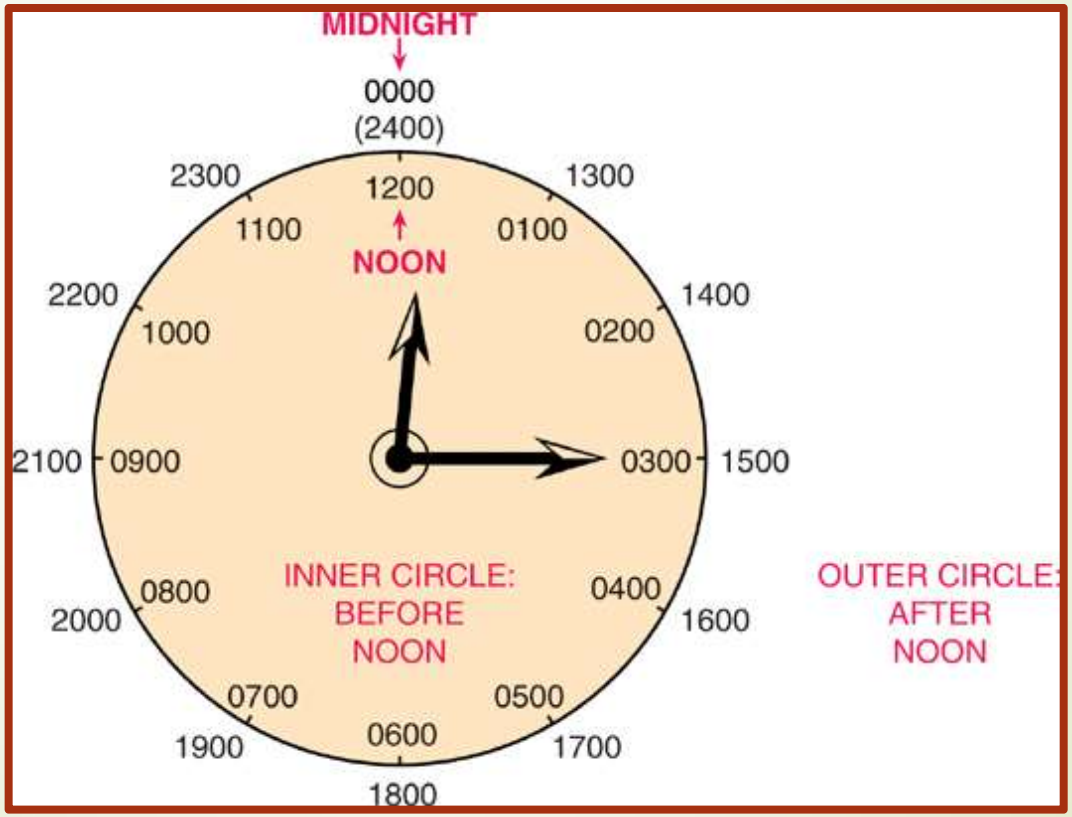
Answers

- 1.25 L = 1250 mL
- 2.5 g = 2500 mg
- 0.125 mg = 125 mcg
- 2.5 tsp = 12.5 mL
- 3 oz = 90 mL

Section One

* Convert between traditional time & military time

24-Hour Clock



Comparison of Traditional & 24-Hour Clock

Military time is used to bypass opportunities for error

AM	Int'l. Time	PM	Int'l Time
12:00 midnight	2400	12:00 noon	1200
1:00	0100	1:00	1300
2:00	0200	2:00	1400
3:00	0300	3:00	1500
4:00	0400	4:00	1600
5:00	0500	5:00	1700
6:00	0600	6:00	1800
7:00	0700	7:00	1900
8:00	0800	8:00	2000
9:00	0900	9:00	2100
10:00	1000	10:00	2200
11:00	1100	11:00	2300

Practice Time

- Convert to military time:
  - 5:30 am - _____
  - 5:30 pm - _____
- Convert to traditional time:
  - 0200 - _____
  - 1400 - _____
- Convert to military time:
  - 1230 am - _____
  - 1230 pm - _____

Answers

- Convert to military time:
  - 5:30 am - 0530
  - 5:30 pm - 1730
- Convert to traditional time:
  - 0200 - 2:00 am
  - 1400 – 2:00 pm
- Convert to military time:
  - 1230 am - 0030
  - 1230 pm - 1230

Section Two

* Medication Administration (errors, rights)
* Identify equipment used in medication administration
* Measure medication amounts using different syringes and medication cups

Collaborative Organizational Approach to Prevent Med Errors

- Institute for Safe Medication Practice (ISMP)
- United States Pharmacopeia (USP)
- The Joint Commission (TJC)
- The Institute of Medicine (IOM)
- U.S. Food & Drug Administration (FDA)
- Quality & Safety Education for Nurses (QSEN)
- The National Quality Forum (NQF)

What is considered a med error?

The National Coordinating Council for 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".

The American Hospital Association lists the following as some common types of medication errors:

- Incomplete patient information (patients' allergies, other medicines they are taking & lab results)
- Unavailable drug information (lack of up-to-date warnings)
- Miscommunication of drug orders (poor handwriting, confusion between drugs with similar names, misuse of zeroes and decimal points, confusion of metric and other dosing units, and inappropriate abbreviations)
- Lack of appropriate labeling as a drug is prepared and repackaged into smaller units
- Environmental factors, such as: lighting, heat, noise, and interruptions, that can distract health professionals from their medical tasks.

Medication Errors

- When do medications occur
  - ~ 39% of med errors occur during the ordering process
  - ~12% occur during the order verification process
  - ~11% occur during the preparation & dispensing process
  - ~38% occur at administration
- One 5-year study showed that the most common types of medication errors were a wrong dose, a wrong drug or a wrong route of administration
- The two most common errors
  - dispensing medicine at the wrong time (43% of incidents)
  - omitting a dose (30%).

Medication Administration

- There are preventable medication errors that occur each year
- There are clients injured each year due to medication errors
- There are deaths each year due to medication errors.
- **What type of errors:**
  1. Incomplete pt knowledge
  2. Lack of up to date info on medication
  3. Mathematical errors
  4. Miscommunication of orders, poor hand writing, misuse of decimal points, inappropriate abbreviation
  5. Failure to properly id a pt prior to administration
  6. Wrong med
  7. Wrong pt
  8. Wrong time

Why so much talk about the elderly??

- Normal physiological changes
  - Slowing down of body's functions
  - Decrease circulation
  - Slower absorption
  - Slower metabolism
  - Decrease excretory function
  - Decrease body wt
- Multi Rx's (average 4 or >)
- Require smaller doses given farther apart to prevent toxic effects.
- Teaching (education) is essential for *PREVENTION* of potential deadly harm..

JCAHO, what's that???

The Joint Commission

To continuously improve health care for the public, in collaboration with other stakeholders, by

evaluating health care organizations &

inspiring them to excel in providing safe and effective care

of the highest quality and value.

2010 National Patient Safety Goals

established in 2002 to help accredited organizations address specific areas of concern in regards to patient safety

- NPSG.01.01.01: Use at least two patient identifiers when providing care, treatment and services.

National Patient Safety Goals

- 1. Improve the accuracy of patient identification.
- 2. Improve the effectiveness of communication among caregivers.
- 3. Improve the safety of using high-alert medications.
- 4. Eliminate wrong-site, wrong-patient and wrong-procedure surgery.
- 5. Improve the safety of using infusion pumps.
- 6. Improve the effectiveness of clinical alarm systems.
- 7. Reduce the risk of health care-acquired infections.
- 9. Reduce the risk of patient harm resulting from falls.
- There more here: https://www.jointcommission.org/hap_2017_npsgs/

Critical Thinking

- ***Failure to think*** about what you are doing and why you are doing it along with failure to assess a client can result in ERRORs…..
- Is essential for safe medication administration
- Allows you to:
  - Be reasonable and rational
  - Be an autonomous thinker
  - Distinguish irrelevant info form what is relevant
  - Ask for clarification when needed

The Six Rights of Medication Administration

- The Six-Eight Rights of *safe* and *accurate* medication administration:
  - **the (1)*right*_____ must receive**
  - **the (2)*right*_____ in**
  - **the (3)*right*_____ by**
  - **the (4)*right*_____ at**
  - **the (5)*right*_____ followed by**
  - **the (6)*right*_____.**
- Failure to do any of these rights constitutes a medication error……
- 7th right: Right to _____…..
- 8th right: Right to be _____ about the medication

The Six Rights of Medication Administration

- The Six-Eight Rights of *safe* and *accurate* medication administration:
  - **the (1)*right* *patient* must receive**
  - **the (2)*right* *medication* in**
  - **the (3)*right* *dosage* by**
  - **the (4)*right* *route* at**
  - **the (5)*right* *time* followed by**
  - **the (6)*right* *documentation.***
- Failure to do any of these rights constitutes a medication error……
- 7th right: Right to refuse.
- 8th right: Right to be educated about the medication

Routes of administration

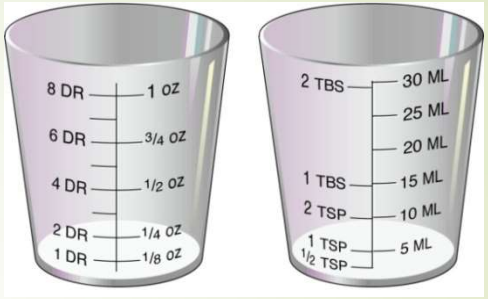
- **Oral (p.o.)** – given by mouth (form tablets, capsules, liquid)
- **Sublingual (SL)** – placed under the tongue where they are easily absorbed thru blood vessels (DO NOT SWALLOW)
- **Buccal** – placed in mouth against mucous membrane of cheek, dissolves easily
- **Parenteral** – given by route other than mouth; IV, IM , SQ, ID
- **Insertion** – placed into body cavity and dissolves at body temp (suppository)
- **Instillation** – in liquid form placed into body cavity (eye ointment, nose gtts, ear gtts)

Routes of administration

- **Inhalation** – admin into resp tract by nebulizers (etc. asthma)
- **Intranasal** – solution into the nostrils
- **Topical** – applied to the external surface of the skin (lotion, ointment or paste)
  - **Percutaneous** - absorbed directly through the skin or mucous membranes (ointment, powder, lotions, liquid).
  - **Transdermal** – contained in a patch or disk and applied topically. Slow release 24 hrs to 7 days

Equipment used for oral medication administration

- Medication Cup (plastic)



- Soufflé Cup (paper)

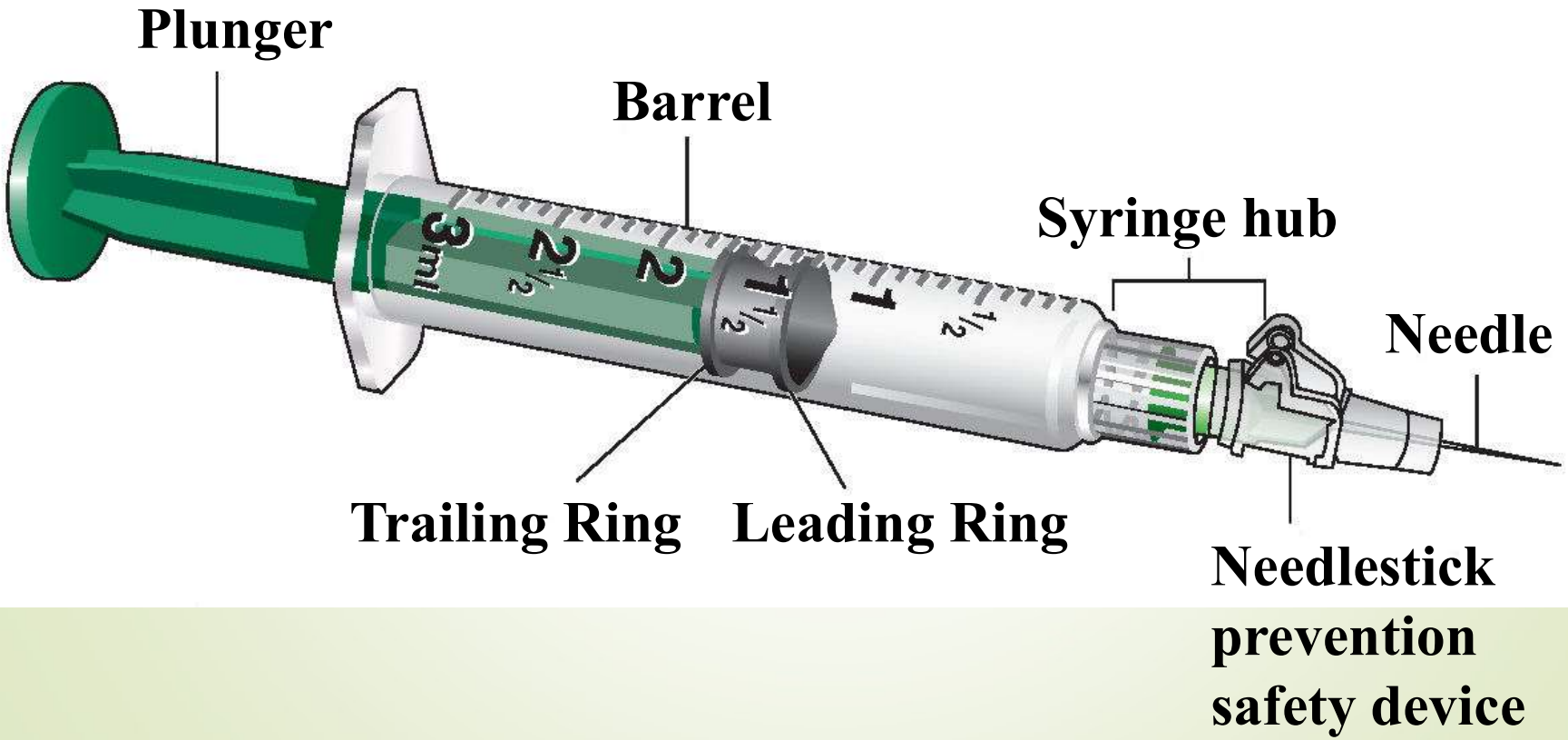
- Calibrated Dropper

- Calibrated spoons

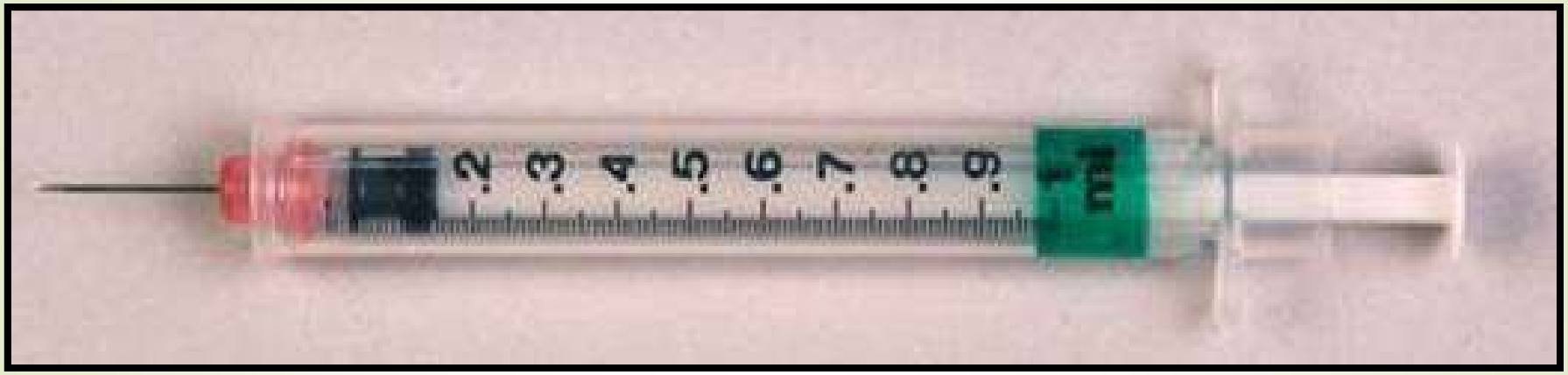
- Nipple

- Oral Syringes

Hypodermic Syringe



1 mL Syringe



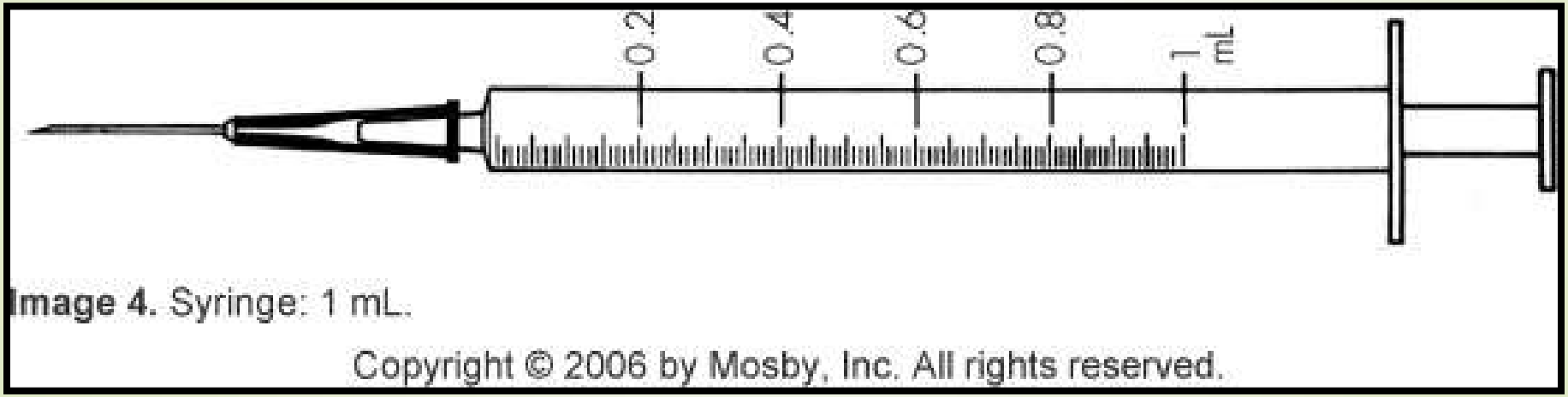
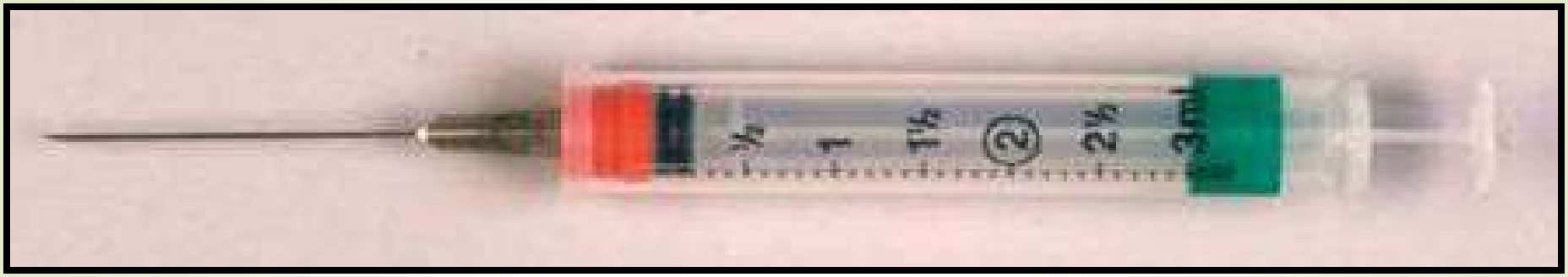


Image 4. Syringe: 1 mL.

3 mL Syringe



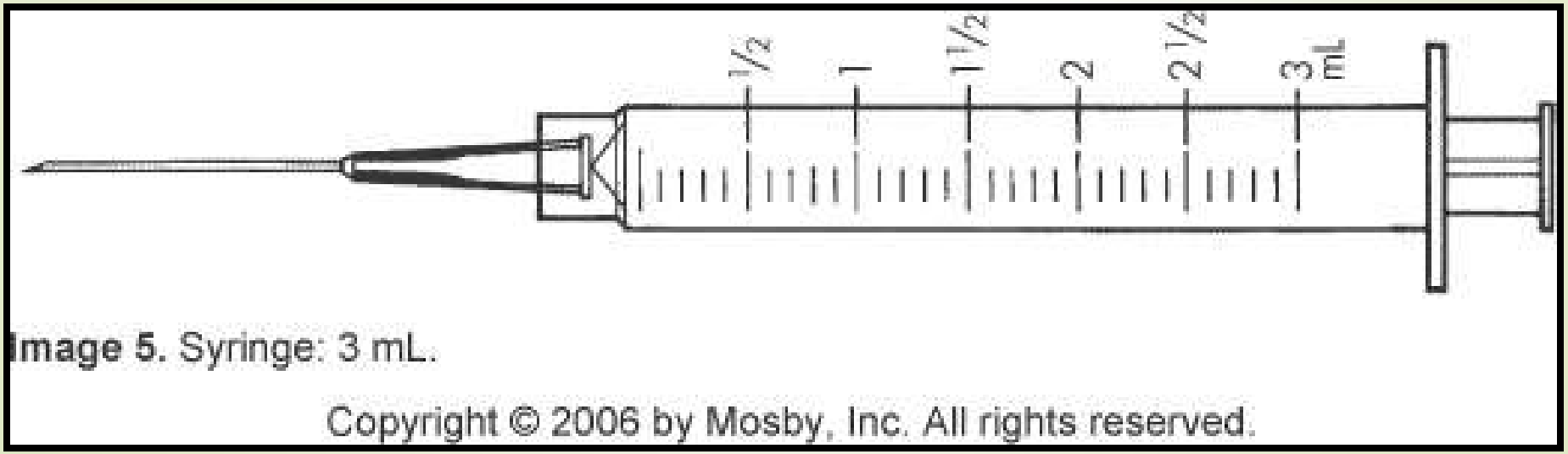


Image 5. Syringe: 3 mL.

5 ml and 10 ml Syringe

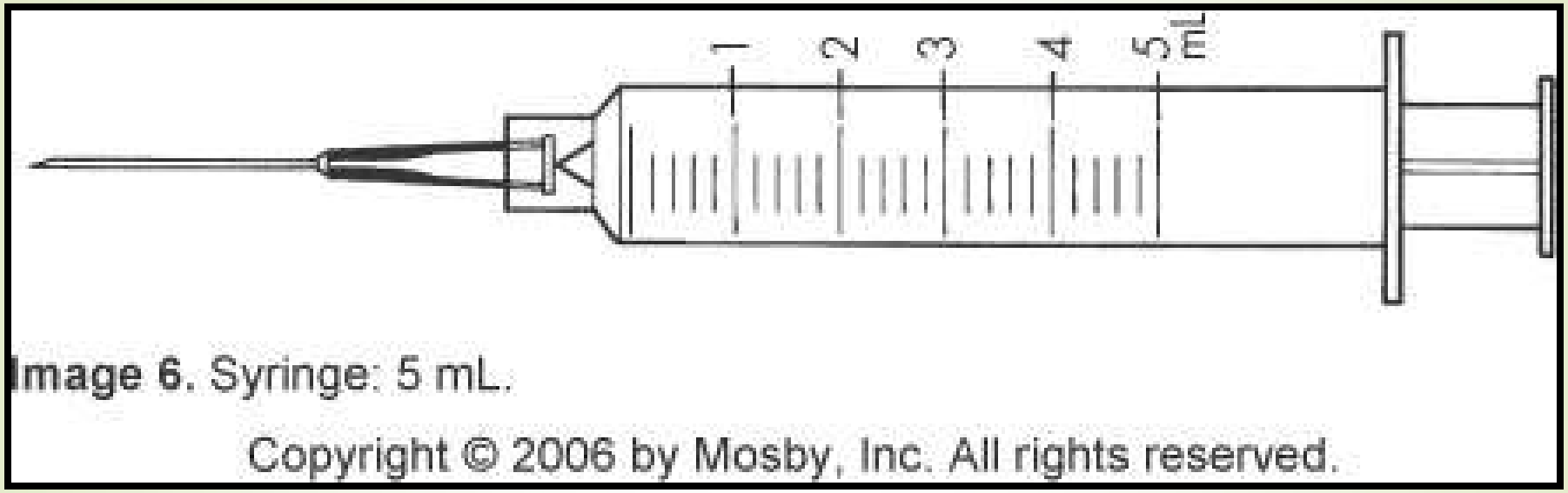


Image 6. Syringe: 5 mL.

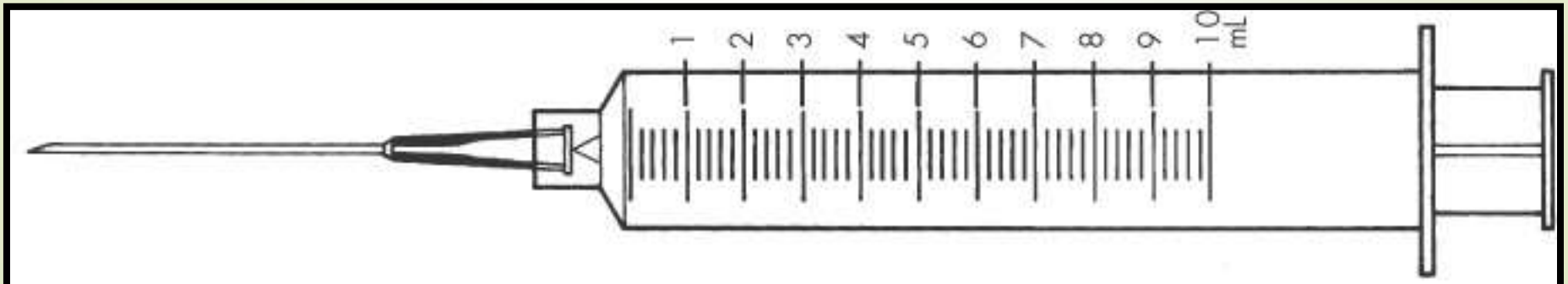


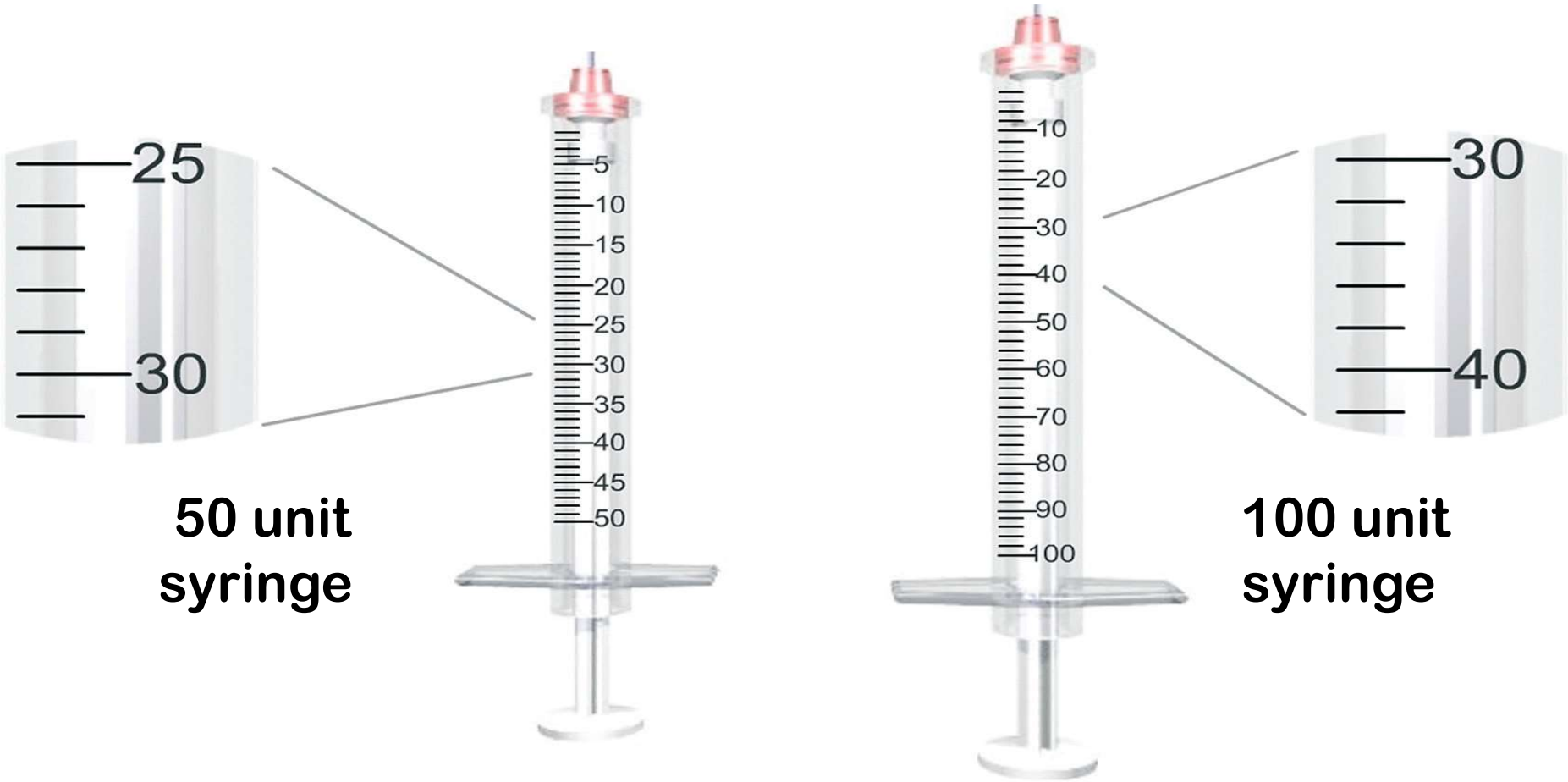
Image 7. Syringe: 10 mL.

Insulin Syringes

- Insulin syringes are used only to measure and administer insulin.
  - U-100 insulin most common form
- They are calibrated in units.
- U-100 insulin syringes are available in 50 and 100 unit capacities.

Insulin Syringes

Comparison of insulin syringes:



50 unit syringe

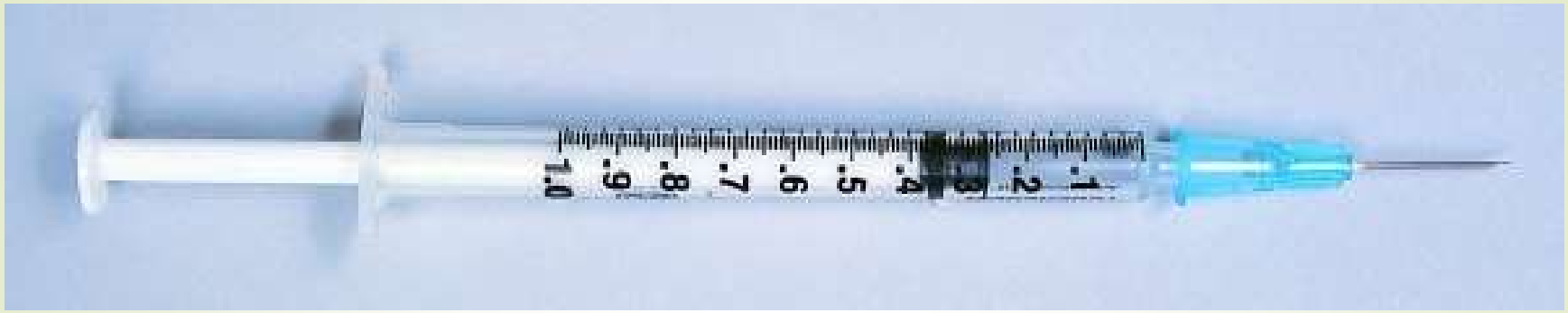
100 unit syringe

Safety Syringes

Tuberculin Syringes

- Uses
  - Subcutaneous injections
  - Intradermal injections
  - Doses less than 1 mL
- Examples:
  - PPD skin test
  - Vaccines
  - Heparin
  - Pediatric medicines
  - Allergen extracts

Tuberculin Syringes



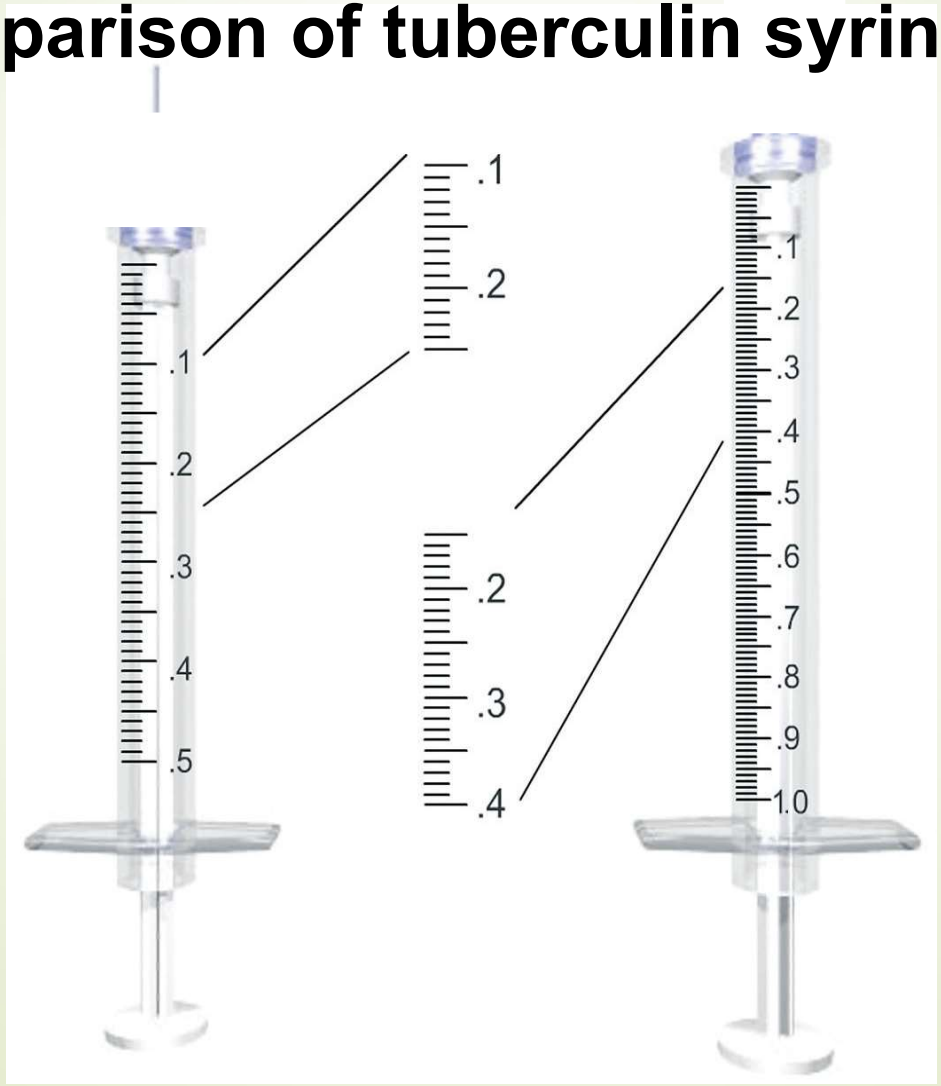
1 mL Tuberculin Syringe

0.5 mL Tuberculin Syringe

Tuberculin Syringes

Comparison of tuberculin syringes:

0.5 mL syringe



1 mL syringe

Safety Syringes and needless systems

Section Three

* Understanding and interpreting physicians orders

The Drug Order

- The drug order consists of seven (7) parts
  1. Full _____ of the patient
  2. _____ and _____ when the order was written
  3. _____ of the _____ to be administered
  4. _____ of the drug
  5. _____by which the drug is to be administered
  6. _____, time, and special instructions related to administration
  7. _____ of the person writing the order

The Drug Order

- The drug order consists of seven (7) parts
  1. Full **name** of the patient
  2. **Date** and **time** when the order was written
  3. **Name** of the **medication** to be administered
  4. **Dosage** of the medication
  5. **Route** by which the medication to be administered
  6. **Frequency,** time, and special instructions related to administration
  7. **Signature** of the person writing the order

Example: The Drug Order

- Identify the missing part of the medication order:
  - Septra DS tab 1 daily
  - Prednisone 10 p.o. every other day
  - 25 mg p.o q 12 h, hold if B/P < 100 systolic
- Identify the mistake in the following order and correct the order:
  - Lasix 10.0 mg p.o. b.i.d.
  - Haldol .5 mg p.o. t.i.d.

Answer

- Identify the missing part of the medication order:
  - Septra DS tab 1 daily (Route)
  - Prednisone 10 p.o. every other day (unit of measure, i.e. mg, g, etc.)
  - 25 mg p.o q 12 h, hold if B/P < 100 systolic (name of medication)
- Identify the mistake in the following order and correct the order:
  - Lasix 10.0 mg p.o. b.i.d. (trailing zero not needed)
  - Haldol .5 mg p.o. t.i.d. (zero missing before the decimal)

Examining Drug Orders

- All parts of the drug order must be stated clearly, for accurate, exact interpretation.
- Standard abbreviations and symbols must be used.
- Read back of oral orders is a requirement of the Joint Commission
- If you are ever in doubt as to the meaning of any part of a drug order, ask the writer to clarify.

A client is to receive their scheduled medication at 0830 and at 1830. Write in traditional time the times your client will receive their medication?

_____

A client is to receive their scheduled medication q.i.d. How many times a day will your client receive their medication?

_____

A client is to receive their scheduled medication at 0830 and at 1830. Write in traditional time the times your client will receive their medication?

0830 = 8:30 am

1830 = 6:30 pm

A client is to receive their scheduled medication q.i.d. How many times a day will your client receive their medication? **q.i.d = 4 x day**

A client is to receive medication via the buccal route. What instructions should the nurse give this client?

A. Suck on the medication until it dissolves.
B. Let the medication dissolve under the tongue.
C. Chew the medication slowly, then swallow.
D. Place the medication between your cheek and gum.

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The physician orders medication for your client. When researching the medication prior to administration, the nurse notes that the dosage is outside the usual range.

What should the nurse do?

A. Give the medication as ordered.
B. Give the dosage stated in the reference.
C. Notify the physician to clarify the order.
D. Consult a pharmacist to clarify the order.

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The physician orders 50 mg of Demerol to be given intramuscular every six hours as needed for pain. What order is written correctly?

A. Demerol 50.0 mg IM q 6 h prn pain
B. Demerol 50 mg IV q 6 h prn pain
C. Demerol 50 mg IM q 6 h prn pain
D. Demerol 50 mg IV p 6 h prn pain

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D. Demerol 50 mg IV p 6 h prn pain

A nurse is administering an oral narcotic. The client accidentally drops the medication on the floor. What is the correct way to dispose of this medication?

A. Throw the medication into the trash can in the client's room, then record the wastage on the appropriate form.

B. Dispose of the medication in front of another licensed nurse, then record the waste per facility procedure.

C. Flush the medication down the toilet in the client's bathroom, then locate another licensed nurse to co-sign the wastage.

D. Have a nursing assistant observe the disposal of the medication, then record the waste on the appropriate form.

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D. Have a nursing assistant observe the disposal of the medication, then record the waste on the appropriate form.

Section Four

* Transcribe accurately onto the client's medication administration record (MAR)

* Document medication administration correctly onto the MAR

DATE	TIME WRITTEN	PLEASE USE BALL POINT - PRESS FIRMLY	√	SCANNED	READ BACK
8/14/2011	0700	Keflex 250 mg p.o. q 6 h			
		Humulin N U-100 Insulin 40 units SC before breakfast			
		Demerol 75 mg IM q 3-4 h p.r.n. severe pain			
		Tylenol 650 mg p.o. q 4 h p.r.n. fever > 101			
		Lasix 40 mg p.o. q.d.			
		Slow-K 8 mEq p.o. b.i.d.			
		Dr. Henry Jones			

Allergies: PCN, Sulfa, E-mycin	Simpson, Linda Catherine
	DOB 9/21/60 something
Patient DX: Loco? Who knows???	
Height: **Weight:**	Medical Record # 123456789
	Date of Admission 8/14/11

MEDICATION ADMINISTRATION RECORD

ORIGINAL ORDER DATE	DATE STARTED / RENEWED	MEDICATION - DOSAGE	ROUTE	SCHEDULE 11-7	SCHEDULE 7-3	SCHEDULE 3-11	DATE 11/3/xx 11-7	11/3/xx 7-3	11/3/xx 3-11	DATE 11/4/xx 11-7	11/4/xx 7-3	11/4/xx 3-11	DATE 11/5/xx 11-7	11/5/xx 7-3	11/5/xx 3-11	DATE 11/6/xx 11-7	11/6/xx 7-3	11/6/xx 3-11
11/3/xx	11/3/xx	Keflex 250 mg q. 6 h	PO	12 6	12	6		GP 12	MS 6	12 JJ 6 JJ	GP 12	MS 6						
11/4/xx	11/4/xx	Humulin N NPH U-100 insulin 40 U ā breakfast	SC		7^{30}						GP 7^{30} (B)							
11/3/xx	11/3/xx	Lasix 40 mg q.d.	PO		9			GP 9			GP 9							
11/3/xx	11/3/xx	Slow-K 8 mEq b.i.d.	PO		9	9			MS 9		GP 9	MS 9						
		PRN																
11/3/xx	11/3/xx	Demerol 75 mg q. 3-4 h	IV	severe pain				GP 12 (L)	MS 6 (M) –	10 (J)								
11/3/xx	11/4/xx	Codeine 30 mg q. 4 h	PO	mild–mod pain						JJ 6	GP 2							
11/3/xx	11/3/xx	Tylenol 650 mg q. 4 h	PO	fever >101°F				GP 12	MS 4–8	JJ 12–4	GP 8–12							

PRN

INJECTION SITES

B - RIGHT ARM
C - RIGHT ABDOMEN
D - RIGHT ANTERIOR THIGH
G - LEFT ARM
H - LEFT ABDOMEN
J - LEFT ANTERIOR THIGH
L - LEFT BUTTOCKS
M - RIGHT BUTTOCKS

DATE GIVEN	TIME	INT.	ONE - TIME MEDICATION - DOSAGE	RT.
11/3/xx	2200	ms	Lasix 80 mg stat	IV

SIGNATURE OF NURSE ADMINISTERING MEDICATIONS

SCHEDULE	DATE 11/3/xx	DATE 11/4/xx	DATE	DATE
11-7		JJ J. Jones, LPN		
7-3	GP G. Pickar, RN	GP G. Pickar, RN		
3-11	MS M. Smith, RN	MS M. Smith, RN		

DATE GIVEN	TIME	INT.	MEDICATION-DOSAGE-CONT.	RT.
			RECOPIED BY:	
			CHECKED BY:	

Patient, Mary Q.

#3-11316-7

ALLERGIES: None Known

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