

Unit 7 Pain and Inflammation Management Agents

PAIN

Introduction

As their name suggests, analgesics (commonly referred to as painkillers) are used primarily to relieve pain without causing loss of consciousness. There are several classes of analgesics. The classes are determined by the chemical structures and mechanisms of action. In this unit you will learn about Marian Anderson, a 53-year-old with a PhD in education, who was recently found to have uterine cancer. She has undergone extensive surgery and is now home.

Before beginning this case, review Chapter 24, Antiinflammatory Drugs, and Chapter 25, Nonopioid and Opioid Analgesics. Then click Next to begin the case study.

Click **Next** to continue.



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PAIN

Case Study: Dr. Marian Anderson

Dr. Anderson had a total abdominal hysterectomy and bilateral salpingoophorectomy for stage 2 uterine cancer 3 weeks ago. The abdominal incision appeared to be healing well until this morning, when she noticed the incision was open about 2 inches along the left lateral edge and was leaking a cloudy, foul-smelling fluid. She made an appointment with her surgeon for evaluation.

After completing the physical examination, Dr. Anderson was taken back to the operating room, where the incision was reopened, the tissues were debrided, and the wound was packed with saline-soaked roller gauze.

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Discharge Home

Dr. Anderson's discharge home is uneventful. The visiting nurse, Sue, calls Dr. Anderson that same day to set up a time for the intake meeting and first dressing change. Sue advises Dr. Anderson to be sure to take her pain medicine about 30 minutes before the dressing change so that the procedure will be more comfortable and sets about reviewing Dr. Anderson's outpatient surgery discharge summary.

Click the image to access Dr. Anderson's history. For easy reference as you proceed through this case study, you may want to print the discharge summary.

Click **Next** to continue.

SHORE COUNTY HOSPITAL
OUTPATIENT SURGERY DISCHARGE SUMMARY

Patient Address:
400 S. BROADWAY
PO BOX 1000
DUNDEE, WISCONSIN 53015-1000

Discharge Date: 10/17/2014 Discharge Time: 1:00 PM
Admission Date: 10/17/2014 Admission Time: 8:00 AM

Discharge Summary: Patient was discharged on 10/17/2014 after a 24-hour stay in the Outpatient Surgery Center. The patient was discharged on 10/17/2014 at 1:00 PM. The patient was discharged on 10/17/2014 at 1:00 PM. The patient was discharged on 10/17/2014 at 1:00 PM.

Discharge Instructions:

- Take all medications as directed.
- Wound care: Keep the wound clean and dry. Change the dressing as directed.
- Pain management: Take pain medication as directed.
- Activity: Avoid heavy lifting and strenuous activity.
- Diet: Eat a normal diet as tolerated.
- Follow-up: Return to the Outpatient Surgery Center for a follow-up visit on 10/24/2014.

Discharge Medications:

Medication	Dose	Frequency	Route
Acetaminophen	650 mg	q4h	PO
Ibuprofen	400 mg	q6h	PO
Clonidine	0.1 mg	q4h	PO
Hydrocodone	5 mg	q4h	PO

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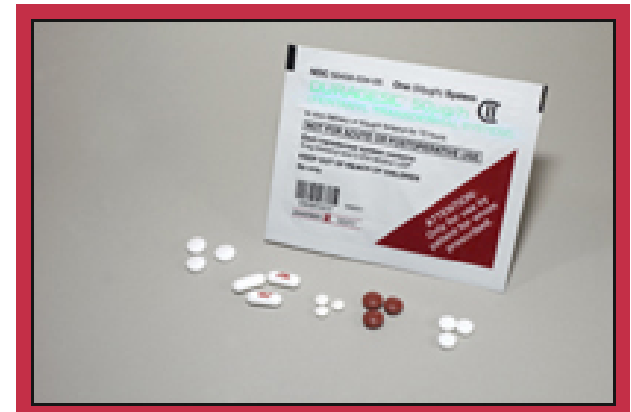
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PAIN

Types of Pain

While reviewing Dr. Anderson's discharge summary, Sue also takes note of the location, size, and depth of the wound at the time of the debridement. Sue believes that this information will be useful in understanding the type of pain Dr. Anderson may experience with dressing changes. Review the definitions of the various types of pain before continuing the case study.



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- Acute pain: Pain occurs suddenly and responds to treatment. It may result from surgery, trauma, inflammation, or tissue injury.
- Cancer pain: Pain from pressure on nerves and organs, blockage to blood supply, or metastasis to bone.
- Chronic pain: Pain that persists for greater than 6 months and is generally difficult to treat or control.
- Neuropathic pain: Neural hypersensitivity that results from injury or disease of the peripheral or central nervous system (CNS).
- Somatic pain: Pain that originates from skeletal muscles, ligaments, or joints.
- Superficial pain: Pain from surface areas such as the skin and mucous membrane.
- Vascular pain: Pain that results from a pathology of the vascular or perivascular tissues.
- Visceral pain: Pain that originates from organs or smooth muscles.

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PAIN

Side Effects of Opioids

Acetaminophen/oxycodone 500/7.5 mg PO is ordered for Dr. Anderson's use before dressing changes. As long as the drug is taken 30 minutes before, the dressing changes are less painful, a 6 out of 10. During a dressing change 3 days later, Dr. Anderson tells Sue that she feels "full," as if too much packing is being placed in the wound. Sue reassures her that the same amount is being used as before and inquires about other symptoms. Sue knows that Dr. Anderson's comment may be stem from which of the following factors?

Select one of the following choices.

[Choice 1](#): Increased bowel motility

[Choice 2](#): Decreased bowel motility

[Choice 3](#): Increased appetite

Click **Next** to continue.



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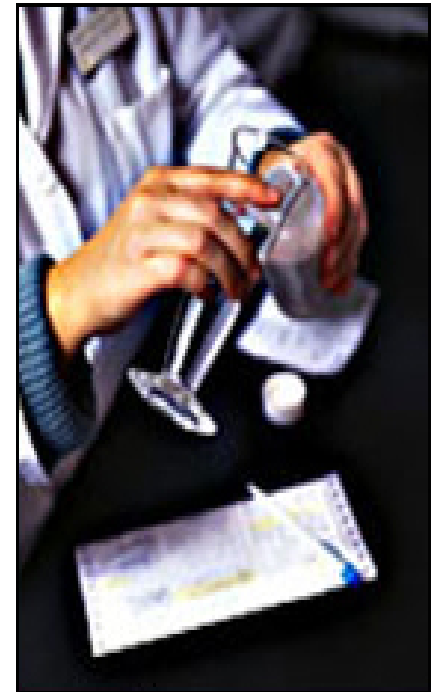
Module 12 Drug Calculation Review

LESSON 1: CONVERSION BETWEEN SYSTEMS OF MEASUREMENT

Systems of Measurement with Conversion

The two most commonly used systems of measure you will use in nursing are metric and household. While the [metric system](#) is the internationally accepted system of measure, the [household system](#) is commonly used in community and home settings in the United States.

Click **Next** to continue.



Module 12 Drug Calculation Review

LESSON 1: CONVERSION BETWEEN SYSTEMS OF MEASUREMENT

Principles for Conversion from a Larger to a Smaller Unit of Measure in the Metric System

You can use one of three principles to convert a measurement from a larger unit of measure to a smaller unit of measure. The method for each principle is illustrated in the following examples.

Example: Change 1 g (one gram) to milligrams (mg)

You need to change to a unit of measure one-thousandth (1/1000) or three decimal places smaller. There are three ways or methods to perform this calculation:

Method 1: Multiply by 10 three times:

$$1 \text{ g} \times 10 \times 10 \times 10 = 1000 \text{ mg}$$

Method 2: Multiply by 1000:

$$1 \text{ g} \times 1000 = 1000 \text{ mg}$$

Method 3: Move the decimal three places to the right:

$$1 \text{ g} = 1.000 = 1.000 = 1000 \text{ mg}$$



Click **Next** to continue.

Module 12 Drug Calculation Review

LESSON 1: CONVERSION BETWEEN SYSTEMS OF MEASUREMENT



Practice Problems for Conversion from a Larger to a Smaller Unit of Measure in the Metric System

Practice converting from larger to smaller units of measure in the metric system. For each of the following three problems, use the method you prefer to do the conversion, then type your response in the box provided and click **Submit**.

1. 3 g

mg

SUBMIT >

2. 40 mg

mcg

SUBMIT >

3. 6 g

mg

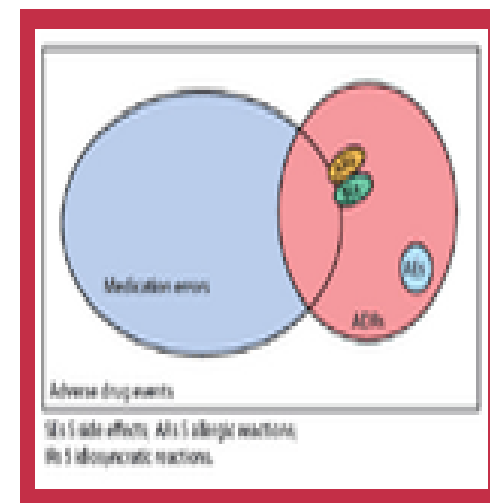
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Module 11 Pharmacotherapeutics 3: Medication Misadventures

ADVERSE PATIENT OUTCOMES

Adverse client outcomes may result even though the client strictly adheres to the medication regimen. An individual client's liver and kidneys may [biotransform](#) the drug in a unique manner, or an unknown disease or condition may alter the drug response. The term [medication misadventures](#) describes adverse outcomes resulting from any cause, including side effects, medication errors, drug allergies, drug interactions, [genetic polymorphisms](#), and unknown causes. Careful attention to client assessment and monitoring can reduce the incidence of medication misadventures and their consequences.



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The term [adverse drug event](#) (ADE) is used to describe any adverse client outcome that results in harm, such as those caused by drug side effects (which are often unpredictable) or some error made by either the client or the health care provider.

Click **Next** to continue.

Module 11 Pharmacotherapeutics 3: Medication Misadventures

ADVERSE DRUG EVENTS

Medication Errors: Dangerous Abbreviations

Some prescribing, dispensing, and administration errors could be prevented if certain abbreviations and jargon were avoided. A list of abbreviations that should not be used in the health care setting is provided by [The National Coordinating Council for Medication Error Reporting and Prevention](#). Print the list from this site and keep it handy for reference.

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Module 11 Pharmacotherapeutics 3: Medication Misadventures

ADVERSE DRUG EVENTS

Medication Errors

Medication errors are the most common cause of adverse drug events (ADEs). If the client suffers harm as a result of an error made by health care personnel, it is called an [iatrogenic hazard](#).

Refer to [Common Classes of Medications Involved in Serious Errors](#). The following are examples of ADEs resulting from the *medication use process*.

Type of Error	Example
Prescribing	The physician prescribed flurazepam (Dalmane) as a sedative to a 93-year-old woman whose husband had just died. The dose was the same as that prescribed for the 54-year-old daughter. The older woman could not be aroused the next day to go to the funeral.
Dispensing	The physician prescribed a low-dose opioid to treat the client's chronic diarrhea. The pharmacy filled the prescription with a high-dose opioid used for clients with chronic cancer pain who are opioid tolerant. The client died of respiratory depression.
Administration	The nurse made a calculation error and gave the infant 10 times the prescribed concentration of IV amoxicillin. The infant died.
Client education	A mother was unable to read English. The written instructions were to give the baby a teaspoon of antibiotic suspension by mouth three times a day for an ear infection. The mother put the medication into the baby's ear and the baby's condition worsened, resulting in a ruptured tympanic membrane (eardrum).