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Arizona State Board of Nursing

MEDICATION ASSISTANT COURSE

For CMAs in long-term care settings. Approved by the Arizona State Board of Nursing July 21, 2010

Eligible Course Providers 32-1650.01

Pursuant to A.R.S. 32-1650.01, the training program shall be either

- A post-secondary education institution that meets the requirements of A.R.S. § 32-1650.01 (A)(1) or (2), or
- A licensed long-term care facility

Course Requirements under A.R.S. 32-1650.01 include:

1. Shall be approved by the Arizona State Board of Nursing
2. Shall schedule no more than 4 consecutive hours of instruction in any one day
3. Shall screen potential students for math and reading comprehension ability
4. Shall administer a minimum of 4 separate unit exams, a medication calculation exam and a comprehensive final exam (while a minimum of three tests and a comprehensive final are required by statute, these requirements reflect the Board's authority to prescribe a curriculum similar to the pilot study (subsection (B)(2)).
5. Shall establish course policies for attendance, clinical supervision, course completion, passing examination scores) and make-up exams consistent with Board requirements (See below for Board requirements).
6. Shall teach according to Board established curriculum
7. Shall ensure that the course instructor meets criteria specified below
9. Furnish a copy of each student's certificate to the Board within 10 days of successful course completion.

Instructor Qualifications under A.R.S. 32-1650.01

The instructor must be an RN with an unrestricted license or multi-state privilege who has at least 40 hours of experience administering medications in a long-term care facility.

Student Qualifications under ARS 32-1650.02

Admission into the training is limited to currently certified nursing assistants (CNA) who:

- Worked as a certified nursing assistant for at least 6 months; have no outstanding complaints or restrictions on CNA certification
- Are at least 18 years old;
- Pass a screening math and reading comprehension test
- Earned a high school diploma, GED, or U.S. college or U.S. military credits or 12 years of education in an foreign country;
 - If educated in a non-English speaking country, a score of 76 on the iBT (internet-based TOEFL) or 6.5 overall and 7.0 on the speaking portion of the International English Language Test Service Academic Examination (IELTS)

Minimum length of the Program under 32-1650.01

- The total program length is a minimum of 100 clock or contact hours. The entity offering the program shall provide of a minimum of 45 of those hours in didactic study inclusive of 4 unit tests, a divided dosage test and a comprehensive final exam.
 - The program shall provide 15 hours of skills lab experience for the purpose of student practice and competency testing before a student is allowed to administer medication to a resident. Medication administration practice in the skills lab is included in the course outline and integrated into the didactic course content. Students must pass a skills lab evaluation as determined by the program before administration of medications to residents.
 - There shall be a minimum of 40 hours of clinical practice utilizing the guidelines of progressive clinical practice and principles of supervision as detailed below

Clinical Practice

A program instructor may supervise the clinical practice or a long-term care facility may provide an RN instructor with an unrestricted license who has a minimum of 6 months medication administration experience to supervise the experience. The program shall provide medication skills checklists to all clinical instructors to record student performance. The clinical instructor supervising the clinical practice of medication assistant students shall engage in no other activities while students are administering medications.

Progressive clinical practice of 40 hours to include:

1. One-to-one instructor observed medication preparation and administration until the instructor determines that the student is safe to progress, starting with a minimum of 5 residents progressing to 10 residents over a period of 3 days for 4 hours per day (12 hours). In addition to providing instruction and guidance, the instructor shall observe, evaluate, and record student performance for each resident medication pass. Students shall perform 30 medication administrations without coaching or missing critical elements to progress.
2. One-to-three instructor-to-student ratio for a minimum of 12 hours. The student may administer medications to 10-15 residents. The instructor shall observe, evaluate, and record performance of medications administered at a specific time to every 3 residents. Students shall perform 15 documented medication administrations without missing critical elements or coaching to progress. A licensed nurse (RN or LPN) shall check all medications for correct drug, time and dosage before administration and review all medication documentation.
3. Upon successful completion of the above, the student may progress to medication passes under the general supervision of the instructor for a minimum of 16 hours to the number of residents determined by the facility to consist of a normal assignment for a medication assistant. The instructor (RN)-to-student ratio shall be no greater than 1:5. The instructor (RN) shall observe, evaluate, and record performance of medications administered at a specific time to every 5 residents. Students shall perform 15 documented medication administrations without coaching or missing critical elements to progress. A licensed nurse (RN or PN) shall check all medications before administration for correct drug, dosage, and time and review all medication administration documentation.
4. Following successful course completion and prior to taking and passing the Board administered competency exam, a CMA course graduate may continue to administer medications to selected residents under the direct supervision of the instructor or designated facility RN consistent with the principles of supervision below.

Principles of Supervision

1. Student supervision is always conducted by the instructor. Throughout the course the instructor shall engage in no other duties during the period of supervision.
2. The student will progress in passing medications to progressively larger groups of residents as the student demonstrates consistent, safe, efficient medication administration according to Board-approved criteria.
3. A licensed nurse (RN or PN) shall review all medication documentation.
4. All medications will be checked for right time, dose, and drug before administration;
5. All critical elements must be performed by the student for all medication passes without coaching or cueing from the instructor for the student to progress from lab to clinical, to a larger number of residents, or to general supervision.
6. The instructor may require more practice than the minimum but in no instances shall less practice be required.

Competency Testing

- CNAs who successfully complete the CMA course shall be eligible to take a certification manual skills and written competency exam
- During the period between course completion and the first attempt on the competency examination, the graduate may administer medications only under the direct supervision of the clinical instructor or a designated RN in the facility.
- Candidates who fail any portion of the competency exam on the first attempt, may not administer medications until they pass the exam except as an enrolled student in a medication assistant program.
- The applicant must pass the competency exam within one year of course completion.

COURSE OUTLINE

Course Overview

This course provides basic background information and routine procedures that are essential for the safe administration of selected medications by experienced certified nursing assistants in a long term care facility. Content includes basic principles of medication administration, simple calculations, and categories of medications. Successful completion of the course and a “pass” on both the written and manual skills exam administered by the Arizona State Board of Nursing (AZBN) will meet the qualifications to become a certified medication assistant (CMA) and administer medications under the provisions of A.R.S. §32-1650, (Certified medication assistants; medication administration; delegation, at a long-term care facility under the supervision of a licensed nurse).

Course Goals

Upon successful completion of the course, the student will be able to:

1. Explain the role of the certified medication assistants (CMAs) in Arizona including allowable acts, conditions, and restrictions.
2. Discuss principles, terminology, laws, and drug references as they apply to administration of medications.
3. Explain principles of medication action.
4. Explain principles of medication administration and nursing assistant care considerations when administering medications to clients of all ages.
5. Accurately calculate medication dosages.
6. Promote safe medication administration in health care facilities.

7. Discuss medication properties, uses, adverse effects, administration, and nursing assistant care of residents receiving the following types of medications:
 - a. Vitamins, minerals, and herbs
 - b. Antimicrobials
 - c. Eye and ear medications
 - d. Skin medications
 - e. Cardiovascular medications
 - f. Respiratory medications
 - g. Gastrointestinal medications
 - h. Urinary system medications and medications to attain fluid balance
 - i. Endocrine/reproductive medications
 - j. Musculoskeletal medications
 - k. Nervous system/sensory system medications
 - l. Psychotropic medications

Clinical Competencies

1. Utilizing the 6 rights of medication administration, administer the following medications to residents when delegated and supervised by a licensed nurse:
 - a. Regularly scheduled medications including controlled substances administered by oral, topical, nasal, otic, optic, and rectal routes.
 - b. Following the nurse's assessment, PRN or "as needed" medications for bowel care or over-the-counter analgesics. The licensed nurse shall evaluate the effects and record the findings
2. Demonstrate application of the principles of asepsis when administering medications.
3. Follow principles of delegation when accepting delegation of medication administration.
4. Accurately document medication administration.
5. Perform nursing assistant care associated with medications administered to residents.
6. Report any changes in resident condition to the delegating nurse.
7. Adhere to Arizona State Board of Nursing statutory limitations during medication administration.
8. Promote resident rights during medication administration.

Limitations on Medication Administration by Certified Medication Assistants A.R.S. §32-1650 (B)

The nurse shall not delegate to a medication assistant

- a. If, in the professional judgment of the nurse, after evaluating the condition and level of services required for the resident and the conduct and skills of the certified medication assistant or medication assistant student, the nurse determines that there would be an unacceptable risk of harm or jeopardize the health or welfare of the resident or that safe delegation cannot be accomplished.
- b. The first dose of a new medication, or of a previously prescribed medication when the dosage is changed.
- c. Any new medication that arrives from the pharmacy without ensuring that it reflects the original prescription.
- d. PRN or "as needed" medications except as described above.
- e. The counting of controlled substances at the beginning and end of a shift and any act associated with obtaining multiple doses of a controlled substance;
- f. Any medication delivered by a needle or by intradermal, subcutaneous, intramuscular, intravenous, intrathecal, and intraosseous routes.

- g. Any medication that must be inserted into a nasogastric tube or gastric tube
- h. A change in oxygen settings or turning oxygen on or off
- i. Inhalant medications
- j. The Regulation of intravenous fluids or programming insulin pumps.
- k. Topical patches and topical medications requiring a sterile dressing or assessment of skin condition.
- l. Sublingual medications
- m. Any medication that requires a mathematical conversion between units of measurement to determine the correct dose.

MINIMUM COURSE POLICIES

ATTENDANCE

- Students must attend all classes to understand the material presented and function at a quality level in the health care setting.
- Students are required to complete the minimum hours of the course (45 didactic, 15 lab, 40 clinical practice)

PASSING STANDARDS

Didactic/Laboratory

Each of the following components must be completed satisfactorily for the student to pass the didactic/lab portion of the course:

- Four unit tests: the student must earn a minimum 75% on each unit test. If a student fails to achieve 75% on a test, an alternate form of the exam may be given for one test only. Students shall not be given access to test items prior to the administration of a test.
- Dosage calculation test: the student must earn 100% on the dosage calculation test. This test should consist of at least 10 simple divided dosage problems with oral medications. It should not require a change in systems of measurement (e.g. ml to tsp). A calculator may be used. Two retakes using alternate forms of the dosage calculation test are permitted. Students shall not be given access to test items prior to the administration of a test.
- Comprehensive Course Test: the student must earn a minimum of 80% on the comprehensive course test. If a student fails to achieve 80% and has passed all unit tests on the first attempt, the student may re-take an alternate form of the comprehensive course test. Students shall not be given access to test items prior to the administration of a test.
- Final skills laboratory: the final skills laboratory exam is Pass/Fail. The program shall test the student in all applicable skills. Critical elements of medication administration for all tested skills are found in the D&S Diversified Technologies Arizona Medication Assistant Manual. The student must demonstrate all critical elements of selected medication administration to receive a grade of “pass.” If each competency is not met, the student will receive a grade of “fail.”

The student must successfully complete the didactic and skills laboratory portion of the course as described above in order to proceed to the clinical practice portion of the course.

Clinical Practice

- The student must complete the clinical practice within 45 days of completing the didactic and skills laboratory

- The student will receive a “pass” or “fail” grade for the clinical practicum; each competency must be met for the student to pass.
- The instructor will place an evaluation form in the students file indicating that the student has met all competencies for each of the 3 levels of clinical practice. The competencies of the previous level must be met to proceed to the next level.

COURSE COMPLETION

- The student successfully meets the passing standards of the didactic/laboratory and
- The student successfully completes the clinical practicum.
- Upon successful course completion, the instructor will provide a document to each successful trainee, which includes the trainee’s name, CNA certificate number, dates of course enrollment and completion, names and addresses of course provider and clinical practice sites, and lead instructor’s signature.
- The training facility will send copies of each student’s certificate of completion to the Arizona State Board of Nursing and D&S Diversified Technologies.

RECORD MAINTENANCE

- Course materials and student records will be retained by the training institution for 3 years.
- Course materials include the following:
 - Course syllabus
 - Course schedule
 - All tests and comprehensive exams
 - Student end-of-course evaluations, the compilation of the evaluations and course improvements instituted as a result of the evaluations
- Records for each student include the following:
 - Student name, date of birth, and CNA certificate number;
 - Copies of tests administered and scores used to assess basic math and reading comprehension
 - Attendance records including total hours for class, lab, and practicum;
 - All scores on tests and quizzes;
 - Skills check lists from clinical practice exam;
 - Instructor completed competency evaluation forms for each level of clinical practice;
 - Copy certificate of course completion.

GRIEVANCE

A student may report a grievance related to the training facility through the established grievance process of the training institution. A student may file a program complaint with the Arizona State Board of Nursing by calling 602-771-7857.

CONDUCT POLICY

The student is expected to conduct him/herself in an ethical and professional manner. A student who commits academic dishonesty and/or acts in an unprofessional manner will be removed from the CMA training program.

RESOURCES

The program should adopt appropriate textbook resources that are current (been published in the last 5 years). Programs shall not copy textbooks in violation of copyright laws. Within these parameters, the program may adopt a text of their choice that will assist students to meet the goals and objectives of the curriculum.

The curriculum was originally based on Gauwitz, D (2005) *Administering Medications: Pharmacology for Health Careers*. 5th Ed. Boston: McGraw-Hill. There is a newer edition available (2007). This text does not address the role of the medication assistant and covers areas outside the role such as administration of parenteral medications and assessing need for and response to medications. Another available text is *Mosby's Textbook for Medication Assistants* by Sorrentino and Remmert (2009) which has more appropriate role information but is structured somewhat differently than the curriculum. It is suggested that instructors have copies of multiple references to supplement didactic learning and always refer to the curriculum and the legal parameters of the role pursuant to A.R.S. 32-1650 in deciding upon assignments and didactic content. Not all curriculum elements may be sufficiently covered or up-to-date in any chosen text and supplemental materials should be incorporated as needed. Regardless of the textbook utilized, the program is responsible for covering the curriculum as this is the content that will be tested in the certification exam.

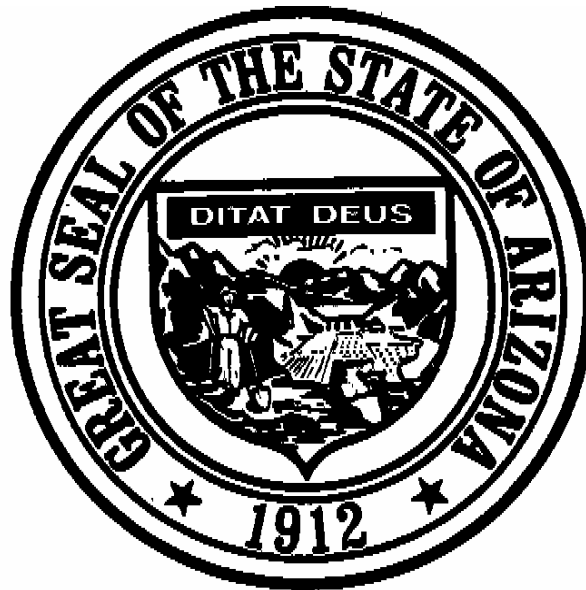
KEY TERMS

Key terms associated with questions on the Competency Exam for Medication Assistants administered by D&S Diversified Technologies have been listed for each unit to assist both educators and students. Not all key terms may be listed as the test changes over time.

STUDENT ASSIGNMENTS

The curriculum is not currently mapped to any text. While the structure is consistent with the original text, that text is outdated. Instructors will be required to align assignments and didactic content to the chosen text.

**ARIZONA STATE
BOARD OF NURSING**



**CURRICULUM
Medication Assistant Training Program**

CERTIFIED MEDICATION ASSISTANT CURRICULUM

The medication assistant training program curriculum was developed by the Medication Technician Pilot Study Steering Committee and approved by the Arizona State Board of Nursing on September 21, 2005. This course provides basic background information and routine procedures that are essential for the safe administration of select medications by experienced certified nursing assistants in a long term care facility. Content includes basic principles of medication administration, simple calculations, and categories of medications.

Goal 1: Explain the role of the medication assistant in Arizona including allowable acts, conditions, and restrictions.

Unit 1: Role of Medication Assistant

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Discuss the legal requirements for medication assistants in Arizona	A. Legislation A.R.S. 32-1650	Read: Nurse Practice Act— Rules/ Article 8 Legislation;	Didactic: 1 hour
B. Describe the medications that CMAs can administer in Arizona	B. Medications that can be delegated and not delegated Regularly scheduled Specific Routes Controlled substances PRNs		
C. Describe Board of Nursing role in the regulation of medication assistants	C. Role of the nursing board— oversight of programs, certification		
D. Explain the delegation process and the information a	D. Process of delegation		

CMA would need to accept delegation

KEY TERMS

Certified medication assistant
Delegation
Communication
Board of Nursing
Nurse practice act
Medication assistant (aide) role
Chain of command
Reporting changes

Goal 2: Discuss principles, terminology, laws, and drug references as they apply to administration of medications.

Unit 2: Laws and Drug References

Objective	Content	Learning Activity	Minimum Time for Unit Didactic: 1.5 hours
A. List drug sources and uses	A. Sources and uses of drugs	A-D. Practice looking up a drug in nursing drug books, and on the internet and discuss the information available	
B. Differentiate between different names for the same drug	B. Drugs known by different names: chemical, generic and proprietary (trade) name		
C. Demonstrate use of drug references	C. Information contained in drug references and types of drug references		
D. Discuss drug legislation and how laws protect the public	D. Major drug laws: 1. Food and Drug Act 2. Controlled Substance Act		

3. Agencies that enforce drug laws

E. Apply legal, ethical, and caring behaviors when administering medications

E. Legal-ethical
Resident rights, experimental drugs, placebos, caring principles—empathy, listening, hope, placebo effect

E. Demonstrate how the facility complies with the controlled substance act—locked narcotics, wastage etc.

KEY TERMS

Controlled substance act
Confidentiality
Controlled substances
Drug abuse
Drug Enforcement Agency (DEA)
Drug reference
Drug standards
Nursing drug reference
Manual
Schedule drugs I-V
Generic name
Trade name
FDA requirement
OTC

Goal 3: Explain principles of medication action.

Unit 3: Principles of Medication Action

Objective	Content	Learning Activity	Minimum Time for Unit Didactic: 2 hours
A. Describe the processes of drug absorption, distribution, metabolism, and excretion and resident education/care that will support the desired effects of drugs	A. Processes of absorption, distribution, metabolism, and excretion and nursing assistant measures that support appropriate drug action	A-E Lecture; encourage discussion--ask students to: List personal factors that may affect drug actions; describe an adverse reaction from their own experience; Have they ever experienced tolerance, etc	
C. List and describe factors affecting drug action.	C. Factors affecting drug action: age, size, diet, gender (male/female), genetics, diseases, psychological factors, routes of administration, time of administration, drug taking history, environmental effects.		
D. Distinguish between therapeutic effects and side effects of a drug	D. Therapeutic/side effects of drugs Local and systemic action		
E. Describe types of adverse reactions to drugs and nursing assistant responsibilities for each type of adverse reaction.	E. Adverse reactions; signs and symptoms; nurse assistant responsibilities for: 1. Drug allergy 2. Tolerance 3. Cumulative Effect 4. Overdose and Toxicity		

- 5. Drug interactions
- 6. Other drug related

F. Differentiate between drug dependence and abuse in residents and staff.

F. Drug dependence and Abuse; nursing assistant responsibilities

F. Discuss risk for abuse among health care professionals

KEY TERMS

Drug allergy
Allergic reaction
Adverse effects
Anaphylaxis
Urticaria
Drug tolerance
Placebo
Drug classification
Absorption
Distribution
Metabolism
Excretion
Drug action
Drug interactions
Side effect
Physiologic action
Toxic
Drug dependence

Goal 4: Explain principles of medication administration and nursing care considerations when administering medications to clients of all ages.

Unit 4: Life Span Considerations

Objectives	Content	Learning Activities	Minimum Time for Unit Didactic: 1 hour
A. Recall the effects of aging on body systems	A. Effects of aging on body systems	A-C Lecture/discussion with examples Observation of medication administration	
B. Discuss pharmacokinetics in the aged	B. Pharmacokinetics in the aged		
C. Administer medications to elderly residents applying principles of safe medication administration, resident rights, and knowledge of aging changes that may affect ability to take medications.	C. Administration of medications to elderly residents: resident rights, safety principles, caring behaviors, difficult swallowing (thickening)		
D. Discuss the effects of medications on children (optional)	D. Effects of medications on children (optional)		

KEY TERMS

Resident rights
Refusing medication
Medication absorption
Kidney
Drug metabolism
Drug build-up

UNIT TEST #1

Goal 5: Accurately calculate medication dosages

Unit 5: Medication Calculation

Objective	Content	Learning Activity	Minimum Time for Unit
A. Recall common mathematical operations	A. Review of: <ol style="list-style-type: none"> 1. Fractions 2. Decimals 3. Percents 	A. Provide safe and unsafe examples of calculations Lab Practice: Use actual examples from your facility and workbook in class--a calculator may be used.	4 hours theory; 1 hour lab practice with examples (It is recommended that this content be divided into 2 days)
B. Recognize different systems of measurement and when a licensed nurse needs to be involved.	B/C/D. Systems of measurement: <ol style="list-style-type: none"> 1. Metric 2. Household 3. Temperature scales 4. Apothecary (briefly) 		
C. Write and define units of measurement for metric and household systems			
D. State common equivalents among measurement systems and use a conversion table to convert between systems			
E. Calculate the number of tablets or capsules to give when the available dose differs from the ordered dose.	E-G. <ol style="list-style-type: none"> 1. Equivalencies metric/household 2. Dosage calculation for oral medications 3. Dosage calculations with 		
F. Calculate the amount of			

liquid medication to pour when the dose is ordered in units of mass. conversions—licensed nurse needed to do initial calculation

G. Verify a dosage calculation using conversions from one system to another.

KEY TERMS

Dosage
Medication calculation

DOSAGE CALCULATION TEST

Goal 6: Describe measures to promote safe medication administration in health care facilities

Unit 6: Promoting Safe Medication Administration

Objective	Content	Learning Activity	Minimum Time for Unit
A. Name common abbreviations associated with medication administration.	A. Accepted abbreviations (supplemental JACHO recommended)	A. Supplemental JACHO "do not use" abbreviations--quiz C-M. Lecture Discussion/Demonstration	Didactic 5 hours Lab practice 3 hours
B. List medication forms	B. Forms of medication: 1. Liquids 2. Solutions 3. Suspensions 4. Solids/Semisolids 5. Suppositories 6. Topical creams, lotions and ointments Enteric coated	Practice procedures: Medication set up— Liquid/Tablet Documentation Incident report	

C. Describe routes for administering medications	C. Routes of administration: Oral routes: sublingual, buccal, oral Topical Rectal Eye drops Eardrops
D. Recognize the routes of medication that may be administered by the CMA	D. Inhalation/Parenteral, sublingual and PRN medications—only licensed nurse gives
E. Document time using international time (military time)	E. International time
F. Describe the licensed nurses responsibility to check the components of a medication order.	F. Medication orders checked by nurse: 1. Order sheet 2. Prescription components a. Name of drug b. Dose c. Route d. Time/frequency e. Prescriber signature 3. Types of drug orders; routine, standing, PRN, stat 4. Questioning an order
G. Describe the ordering, packaging, storage and disposal	G. Ordering, packaging, storage, and disposal of drugs

of drugs.

H. Describe documentation used to communicate medication orders

H. Documentation:
Medication Record
Self-terminating
Controlled substances

I. Pour medications according to accepted procedure

I. Pouring medications

J. Explain the 6 rights of medication administration

J. The 6 rights of medication administration:
Drug, dose, patient, route time, documentation

K. Document medication administration

K. Charting medications
MAR, principles of charting, reporting medication errors;

L. Report and record observations.

L. Other types of observations that require recording and reporting

KEY TERMS

Prescription label
Drug orders
Amber colored container
Discontinued medication
Prescription warning
Medication inventory
Medication label
Medication error
Medication order
Medication package

Medication record
MAR
Narcotic
Scheduled medication lock box
6 Rights of medication
administration
Oral
Rectal
Nasal
Optic
Otic
Topical
Sub-lingual
AC
BID
Gtt
Hs
Mg
PC
PO
PRN order
q 2 h
qam
qid
tid
Storing medications
Hand washing
Crushing medications
Enteric coatings
Suspensions
Elixirs
Ear drops
Swallowing medications

Tablet disposal
 Topical medications/topical sprays
 Reporting drug errors
 Aspiration
 Suppository
 Unit does packaging
 Valid prescription
 Expiration date
 Administration directions
 Routine medication
 Facility policy

Goal 7: Discuss medication properties, uses, adverse effects, administration of, education, and nursing assistant care of residents receiving the following types of medications:

Unit 7: Vitamins, Minerals, and Herbs

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Identify fat soluble and water soluble vitamins, and minerals	A. Vitamins and minerals 1. RDAs/Food sources 2. Fat-soluble vitamins (A, D, E, and K) 3. Water soluble vitamins 4. Minerals	Emphasize key points and vitamins/minerals commonly given in the facility—do not require memorization-vitamins to learn are in the vocabulary list	Didactic: 1.5 hours
B. List one function of each vitamin or mineral	B. Functions of vitamins and minerals	Relate information to their own health and intake of vitamins and diet	
C. Discuss common herbal supplements, their uses, and the potential dangers.	C. Herbs and unsafe herbs		

KEY TERMS

Vitamin A

Vitamin B12 (also in cardiac unit)

Vitamin C

Vitamin D

Calcium

Calcium carbonate

Fat soluble, water soluble vitamins

Garlic

Ginger

Gingko Biloba

Hawthorne

Herbal medications

Iron (also in cardiac unit)

Iron sulfate

Pernicious anemia (also in cardiac unit)

Recommended daily allowances (RDA)

Riboflavin

St. John's wort

Folic acid deficiency

Potassium

Valerian

Anemia

Scurvy

Unit 8: Antimicrobials

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Discuss types of infection, immunity and persons at risk for infection.	A. Microorganisms, the immune system, risks for infections, the geriatric resident	Lecture/discussion with class participation— Include pertinent information from supplemental articles	Didactic: 2 hours Lab Practice: 1 hour
B. Discuss considerations when administering antibiotics.	B. Considerations when administering antibiotics MRSA, VRE, C-difficile	from the Center for Disease Control (CDC)	
C. Differentiate major categories of antibiotics and the nursing assistant care and administration considerations associated with each type: penicillins, cephalosporins, tetracyclines, macrolides, aminoglycosides, sulfonimides, quinolones	C. Categories, nursing assistant care and administration considerations for: penicillins, cephalosporins, tetracyclines, macrolides, aminoglycosides, sulfonimides, quinolones		
D. Discuss antiviral and antifungal drugs and the nursing assistant care associated with each type.	D. Nursing assistant care and administration considerations associated with antiviral and antifungal drugs (Flagyl).		
E. Demonstrate administration of medications to residents with transmission-based precautions	E. Review of standard and transmission based precautions, emphasis on considerations when administering	E. Demonstration/Return demonstration of administration of medications to residents with transmission	

medications.

based precautions—Use materials from CDC in instructor manual instead of book for this portion

KEY TERMS

- Airborne precautions
- Antibiotic
- Antibodies
- Antiinfective
- Bacterial Infections
- Culture and sensitivity test
- Infections
- Levoquin (levofloxacin)
- Pathogens
- Oral antibiotic
- Penicillin
- Penicillinase Quinolones
- Reverse isolation
- Strict isolation
- Superinfection
- Tetracycline
- Aminoglycosides
- Narrow spectrum antibiotic

UNIT TEST #2

Unit 9: Eye and Ear Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Describe the structure, function, of the eye and medication administration considerations when administering eye medications	A. Structure and function of the eye; administration of eye drops/ointments; effects of aging	A-D Lecture/discussion	Didactic: 2 hours Lab Practice: 1 hour
B. Describe ear and structure,	B. Structure and function of the		

function, and the effect of aging on the auditory system.

ear; effects of aging

C. Identify common eye and ear pathology

C. Common diseases of the eye and ear:
Glaucoma
Eye infections
External otitis
Excess cerumen

D. Identify common types of ear drops and eye medications

D. Ear drops/Eye medications
Eye
Polymyxin B
Pilocarpine
Betaxolol
Acetazolamide
Ear
Polymyxin B
Cerumenex

E. Demonstrate administration of eye and ear medications (drops/ointments)

E. Procedure for administration of eye and ear medications

E. Demonstration/return demonstration of ear drops and eye medications

KEY TERMS

Eye medications
Glaucoma
Hydrocortisone
Neomycin sulfate
Ophthalmic medications
Tinnitus

Unit 10: Skin Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of integumentary system	A. Structure and function of integumentary system	A-E Lecture/discussion/possible grand rounds if examples of disorders can be found within facility	Theory: 2 hours Lab practice: 1 hour
B. Discuss symptoms of skin disorders	B. General symptoms and specific features of common skin disorders Contact dermatitis Eczema Psoriasis Seborrhic Dermatitis Infection Scabies and Pediculosis		
C. Discuss major categories of topical medications	C. Categories of topical medications: Keratolytics, protectives and astringents, antipruritics, anti-inflammatory, antiseptics, topical anesthetics, miticides, transdermal		
D. Identify those skin medications that should be administered by a licensed nurse.	D. Transdermal patches; medications requiring a sterile dressing change; medications requiring assessment of skin condition (Require licensed nurse)		

E. Identify general principles for medicating the skin and associated nursing assistant care.

F. Demonstrate application of topical medications allowed

E. Patient considerations; wound preparation; applying the medication; dressings; follow-up

F. Principles of topical medication administration

F. Demonstration/return demonstration

KEY TERMS

Antipruritic

Astringents

Burn prevention

Calamine/Diphen

hydramine

contact dermatitis

Duo-derm

Integumentary system

Itching

Keratolytic agent

Lotion

Nitroglycerin

Pediculocide

Perineal

Psoriasis

Scabies

Skin disorder

Skin rashes

Transdermal Nitroglycerine

patch

Triamcinolone

Unit 11: Cardiovascular Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of cardiovascular system	A. Structure and function: heart, blood vessels, electrical conduction; blood pressure, pulse (use Federal Guidelines for norms) blood, lymph, effects of aging	A-C. Discuss/Lecture/case study	Didactic: 3 hours Practice: 1 hour
B. Discuss symptoms and characteristics of cardiovascular disorders	B. Cardiovascular symptoms and disorders: CHF, Dysrhythmias, CAD, Blood vessel diseases, Shock, and anemia		
C. Identify characteristics of and nursing assistant activities associated with administration of common classifications of cardiovascular medications within CMA protocols to administer.	C. Characteristics of and nursing assistant activity associated with administration of: Diuretics, antihypertensives, calcium channel blockers, A.C.E. inhibitors, antilipemics, cardiac glycosides, antiarrhythmics, anticoagulants (oral), and hemateminics		
D. Administer oral cardiovascular drugs applying principles of safe drug administration specific to the resident and drug being	D. Principles of safely administering cardiovascular medications (pulse for digoxin; pulse and blood pressure for antiarrhythmics)	D. Demonstration/return demonstration using practice procedure using an antiarrhythmic (propranolol) Propranolol 10 mg p.o. qid.	

administered.

Add take radial pulse and blood pressure and report to nurse before administering— otherwise procedure the same a digoxin.

KEY TERMS

Antianginals
Antiarrhythmics
Anticoagulant
Antihypertensives
Antilipemics
Apical
Aspirin
Cholesterol
Clonidine (Catapres)
Congestive heart failure
Coronary artery disease
Coumadin
Digitalis
Digoxin
Heart rate
Hypertension
Iron

Lipitor
 Lisinopril (Zestril)
 Myocardial infarction
 Orthopnea
 Peripheral vascular disease
 Prothrombin
 Tachycardia
 Edema
 Dyspnea
 Platelets
 Pleurisy
 Pneumonia
 Vasotec (Enalapril)
 Vitamin B-12

Unit 12: Respiratory Medications

Objectives	Content	Learning activities	Minimum Time for Unit
A. Recall structure and function of the respiratory system	A. Structure and function of the respiratory system	A-B Lecture/Discussion/case study	Didactic: 2 hours Lab: 1 hour
B. Discuss symptoms of respiratory distress and common diseases of the respiratory tract	B. Symptoms: Cough, sputum, hoarseness, wheezing, chest pain Diseases: pneumonia, emphysema, asthma, tuberculosis, upper respiratory infection (colds; strep throat)		

C. Apply principles of safe drug administration and nursing assistant care specific to the disorder when administering oral and nasal respiratory medications.

C. Principles of administering oral and nasal respiratory medications and associated nursing assistant care.

C. Demonstration/return demonstration—nasal medications

KEY TERMS

Nasal
Rebound
Antihistamines
Antitussives
Asthma
Bronchiole
Codeine
Nose drops
Albuterol
Decongestant
Emphysema
Expectorants
Histamine
Laryngeal edema
Pharynx
Phenergan
Tuberculosis
Theophyllin
Rifampin

UNIT TEST # 3

Unit 13: Gastrointestinal Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of the digestive system	A. Process of digestion; Structure and function of the digestive system	A-C. Lecture/discussion/case study	Didactic: 2 hours Lab: 2 hours
B. Identify symptoms of digestive disorders and characteristics of common disorders of the digestive tract	B. Symptoms: Nausea, vomiting, diarrhea, flatulence, eructation, constipation, pain Common disorders: constipation, tooth and gum disorders, peptic ulcer disease, hepatitis, gallbladder disorders, colitis, diverticulosis, hemorrhoids		
C. Identify common classifications and characteristics of oral and rectal medications that affect the GI system including drugs used for bowel preparation.	C. Common classifications of oral and rectal GI drugs: antacids, drugs to treat peptic ulcer, antiemetics, anticholinergics/antispasmodics, Antidiarrheals, anti-inflammatory agents, and laxatives (bowel prep).		
D. Apply principles of drug administration and nursing assistant care including potential drug interactions	D. Administering rectal medications; review of oral medications; nursing assistant care/considerations when	D. Demonstration of administration of rectal suppository and enema /return demonstration	

when administering oral and rectal drugs that affect the gastrointestinal system

administering GI drugs/bowel preparation and medicated enemas.

KEY TERMS

Antacids

Anticholinergic

Antiemetic

Bulk-forming laxative

Cimetidine (Tagamet)

Colace

Constipation

Dulcolax

Ipecac syrup

Laxatives

Lomotil

Malabsorption

Metamucil

Milk of magnesia

Omeprazole (Prilosec)

Pancreatin (Entozyme)

Pancrelipase (Pancrease)

Vomiting

Zantac

Unit 14: Urinary System Medications and Medications to Attain Fluid Balance

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of urinary system	A. Review structure and function of urinary system	Lecture/discussion/case studies	Didactic: 1 hour
B. Identify signs and symptoms of common disorders of the urinary system. and imbalances of body fluids, electrolytes and acid-base	B. 1.Common disorders of the urinary system: obstruction, infection, renal failure 2. Imbalances of fluids, electrolytes, and acid-base		
C. Recall principles of antibiotics and apply knowledge to treatment of urinary disorders	C. Review antibiotic properties		
D. Discuss properties of diuretics and oral electrolytes including administration of and associated nursing assistant care.	D. Diuretic types: thiazide, potassium sparing, loop, oral potassium; nursing assistant care considerations when administering diuretics and oral potassium		

KEY TERMS

Acidifiers
Cystitis
Discoloration
Diuretics
Hydrochlorothiazide

(Hydrodiuril)
 Hypercalcemia
 Hyperkalemia
 Hyponatremia
 Incontinence
 Lasix
 Methenamine mandelate
 (Mandelamine)
 Nitrofurantoin (Furadantine)

Unit 15: Endocrine Medications/Reproductive System

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Identify structure and function of the endocrine glands: pituitary, thyroid, pancreas, and adrenal gland, reproductive system	A. Structure and function of the endocrine glands	Lecture/discussion/ case study examples Demonstrate administration/return demonstration (Use oral medication check-off with common endocrine medications in LTC facility and scenarios)	Didactic: 3 hours Lab Practice oral endocrine medications: 1 hour
B. Discuss signs, symptoms and nursing care associated with the following endocrine disorders: diabetes mellitus, disorders of the adrenal gland, thyroid disorders, reproductive system disorders	B. Signs, symptoms and nurse assistant care of: diabetes mellitus, adrenal disorders, thyroid disorders		
C. Identify the purpose of and administer oral endocrine medications demonstrating application of nursing assistant principles: oral diabetic agents	C. Properties and nursing assistant care associated with administration of: oral diabetic agents (diet/accuchecks),		

(importance of diet/accuchecks), corticosteroids, thyroid replacement drugs; hormone replacement

corticosteroids, thyroid replacement drugs; hormone replacement drugs

KEY TERMS

Acarbpose (Precose)
Conjugated estrogens (premarin)
Corticosteroids
Diabetes mellitus
Estrogen
Estradiol (Estrderm)
Fasting sugar
Fludrocortisone (Florinef)
Hormones
Hypoglycemia
Hyperglycemia
Insulin
Mineralocorticoids
Prednisone
Oral hypoglycemics
Tolbutamide (Orinase)
Metformin (Glucophage)
Thyroid
Levothyroxin sodium (Synthroid)
Iodine
Glipizide (Glucotrol)

Unit 16: Musculoskeletal Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of the musculoskeletal system	A. Structure and function of the musculoskeletal system: bones, joints, and muscles	A-B Lecture/discussion/Case examples	Didactic: 2 hours Lab practice: 1 hour
B. Discuss signs and symptoms, drug treatment and associated nursing assistant principals for the following disorders: Physical injuries, osteoporosis, bursitis, gout, osteoarthritis, and rheumatoid arthritis	B. Signs and symptoms, drug treatment and associated nursing assistant care of residents with: Physical injuries, osteoporosis, bursitis, gout, osteoarthritis, and rheumatoid arthritis		
C. Administer drugs for disorders of the musculoskeletal system applying principles of care for residents with musculoskeletal disorders	C. Drug characteristics and administration principles for common drugs used for musculoskeletal disorders: NSAIDs, Tylenol, methotrexate, antihyperuricemics, muscle relaxants and calcium and other drugs to treat osteoporosis	C. Demonstration/return demonstration using NSAIDS prn medication order	

KEY TERMS

Aspirin
Advil
Analgesic

Antiarthritic
 Carisoprodol(Soma)
 Fosamax
 Gout
 Inflammation
 Ibuprofen
 Muscle Relaxants
 Naproxen (Naprosyn)
 NSAIDs
 Rheumatoid disorders
 Tylenol (acetaminophen)
 Uricosuric agents
 Osteoarthritis
 Osteoporosis
 Corticosteroid therapy
 Corticosteroids

Unit 17: Nervous System/Sensory System Medications

Objectives	Content	Learning Activities	Minimum Time for Unit
A. Recall structure and function of the nervous and sensory systems	A. Review structure and function of the nervous and sensory system	A-E Lecture/Discussion/Case Study	Lecture: 2 hours Lab practice: 1 hour
B. Discuss characteristics of nervous system disorders, drug treatment, and associated nursing assistant care: Parkinson's disease, Myasthenia Gravis, Multiple Sclerosis, Epilepsy, and	B. Nervous system disorders, drug treatment and associated nursing assistant care in the following disorders: Parkinson's disease, Myasthenia Gravis, Multiple Sclerosis,	Lab practice: Administering PRN OTC medication for pain	

Cerebral Vascular Accident.

Epilepsy,
CVA

C. Compare properties of drug classifications that affect the nervous system:
Stimulants,
Depressants including narcotic analgesics, anticonvulsants, antiparkinson agents

C. Drug classification properties of Stimulants, Depressants including narcotic analgesics, anticonvulsants, antiparkinson agents

D. Apply principles of drug administration for drugs affecting the central nervous system when administering medications.

D. Principles of administering CNS drugs

E. Discuss principles of administration of medications to treat pain

E. Pain control principles
Review of observing and reporting resident pain, nursing assistant care to relieve pain, administering medications to relieve pain, reporting response to nurse

KEY TERMS

Acetaminophen/

Hydrocodone

Anticonvulsants

Antiparkinsonian agents

Benzotropine mexylate

(Cogentin)

Carbidopa and levodopa
 (Sinemet)
 Central nervous system
 Dilantin (phenytoin sodium)
 Darvocet
 Dizziness
 Drug dependence
 Habit forming
 OxyContin
 Parkinson's Disease
 Percocet
 Seizures
 Stimulants
 Ticlodipine (Ticlid)

UNIT TEST #4

Unit 18: Psychotropic Medications

Objectives	Content	Learning Activities	Minimum Time for Unit Didactic: 2 hours
A. Identify the signs and symptoms of major mental disorders: depression, psychosis, anxiety, bi-polar disorder	A. Signs and symptoms of major mental disorders: depression, anxiety, psychosis, bi-polar disorder	A-B Lecture/discussion/exemplars	
B. Describe classifications of psychotropic drugs, their uses and associated nursing assistant activities.	B. Psychotropic drug classifications: Antidepressants: tricyclic, SSRI's Anti-anxiety agents, sedatives,		

antipsychotics, and lithium

C. Apply legal, ethical, and nursing assistant caring behaviors when administering psychotropic drugs.

C. Legal-ethical considerations; caring behaviors in administering psychotropic drugs

C. Role play scenarios that incorporate refusal of medication and legal/ethical principles

KEY TERMS

Antipsychotic
Ativan
Benzodiazepine
Bi-polar disorder
Depression
Effexor (venlafaxine)
Extrapyramidal symptoms (EPS)
Hallucination
Haloperidol (Haldol)
Librium
Lithium carbonate
Monoamine oxidase inhibitor (MAOI)
Paroxetine (Paxil)
Fluphenazine (Prolixin)
Fluoxetine (Prozac)
Psychotropic
Sedative
Selective serotonin reuptake inhibitor (SSRI)
Sertraline (Zoloft)
Suicide
Diazepam (Valium)

Final Exam:	1 hour (add extra questions on psychotropic medications since it was not covered in previous unit exam)
Skill Check-off Exam:	1 hour
Didactic Instruction:	39 hours
Tests:	6 hours (four unit tests, a dosage calculation test, and a comprehensive final)
Total Didactic:	45 hours
Lab:	14 hours
Check-offs:	1 hour
Total Lab:	15 hours
Didactic + Lab:	60 hours