



**STATE OF LOUISIANA
LOUISIANA DEPARTMENT OF HEALTH**

OFFICE FOR CITIZENS

WITH DEVELOPMENTAL DISABILITIES

CERTIFIED MEDICATION ATTENDANT COURSE

TRAINEE MANUAL

**SEPTEMBER – 1995
REVISED – 1998
REVISED – February 2018**



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Certified Medication Attendant Course

TRAINEE MANUAL

INTRODUCTION TO THE TRAINEE MANUAL

PREFACE

The medication administration training you are beginning is a very vital part of training that will teach you the skills and knowledge needed to properly and safely administer medication to individuals in programs for individuals with intellectual and developmental disabilities.

Every effort has been made to reduce the amount of technical language used, however since pharmacology is directly related to the chemical sciences, some technoscientific terminology is unavoidable. The instructor may need to interpret some of this information in everyday terms. If you feel the instructor is being “too technical”, speak up! **Don’t be shy about asking for clarification.**

It is important that you learn the information presented in this course. Not only will it help you do your job properly, it will help the individuals you serve to receive their medication safely. Just as medicine is helpful, it can also be harmful. **Therefore, it is vitally important that you not only learn all the material, but that you follow the correct procedure at all times.**

ORGANIZATION

Each section of this course contains objectives at the beginning of the lesson to give you an outline of items that you will be learning in that particular lesson. At the end of each lesson you will be expected to answer questions to test your knowledge of the material presented in the lesson. The written exam given at the end of the course will be easier if you use your time wisely in class and study the self-test questions and answers. A glossary is provided for you at the end of the course content. Use it to define medical terminology that you are not familiar with. Remember: the instructor is there to help you. **It is important for you to ask questions and seek help from the instructor** if you are confused or do not understand the information being presented by the instructor.

This is your manual to take with you to your agency. Please feel free to make notes and highlight information emphasized by your instructor. You can refer to the manual if needed when you are working.

In addition to medication administration information, your instructor will provide information about how your agency policies address specific issues and topics. **In these areas your agencies policies and practices will take precedence over the information presented in this manual.**

This course includes 40 hours of theory (classroom instruction) and 20 hours of practicum or on the job training 10 hours of which are conducted in class and 10 hours at your worksite.

Your instructor will go over the specifics with you regarding this part of the course.

REMEMBER

This course is for you to develop skills and knowledge needed to properly and safely administer medications to the individuals that you serve. Ask questions **NOW**, during the course as well as when you are back in the work place administering medications. If you have any doubt or questions regarding a medication you are to administer **STOP DO NOT GIVE IT!** Call your supervisor, the nurse, the physician or pharmacist to get clarification to your question. **A single mistake in administering a medication can be extremely dangerous to the individual.**



A. MEDICATION ATTENDANT LAW

Act 877, 1991, as amended by Acts 668 and 725, 1995

AN ACT

To amend and reenact R.S. 37:1021, 1023, 1024, and 1025, relative to medication attendants; to provide for applicability; to provide for the establishment of drug administration courses by the secretary of the Louisiana Department of Health; to provide for the functions of medication attendants; to provide for qualifications for the drug administration course; and to provide for related matters.

Be it enacted by the Legislature of Louisiana: Section 1. R.S. 37:1021, 1023, 1024, and 1025 are hereby amended and reenacted to read as follows:

1021. Applicability

This Part shall apply to the Office for Citizens with Developmental Disabilities of the Louisiana Department of Health and to community homes for persons with developmental disabilities funded through the Louisiana Department of Health and intermediate care facilities for the developmentally disabled, and to in-home Medicaid waiver services provided to persons with developmental disabilities. This Part shall apply to programs/agencies contracting for services with the Louisiana Department of Health and/or the Department of Social Services except as specifically prohibited in R.S. 37:1024(B) (4). Participation on the part of private providers that contract with the Louisiana Department of Health or the Department of Social Services is strictly voluntary.

1023. Drug administration course; fees

A. Drug administration courses shall be established by the office of the secretary of the Louisiana Department of Health in conjunction with the Louisiana State Board of Nursing and the Louisiana State Board of Practical Nurse Examiners and as approved by the secretary of the Louisiana Department of Health. Persons who have successfully completed the course and passed a qualifying examination shall be permitted to administer certain medications to residents of facilities operated by the Office for Citizens with Developmental Disabilities or community homes for persons with developmental disabilities funded through the Louisiana Department of Health or the Department of Social Services and to persons with developmental disabilities receiving in-home Medicaid waiver services and shall be known as medication attendants. The course shall include but not be limited to instruction of legal aspects, roles, and responsibilities of drug administration, definitions, terminology, classification, measurement, identification, effects, distribution, and the care and handling of drugs.

B. Fees for the drug administration course shall be determined by the office of the secretary of the Louisiana Department of Health. The cost of implementation will be reimbursed to providers with contract by the Louisiana Department of Health or the Department of Social Services.

C. The Louisiana Department of Health shall promulgate rules in accordance with the Administrative Procedure Act to provide for the certification of medication attendants, the renewal, suspension, or revocation of such certification and an appeals process for persons who have been denied certification or renewal, or whose certification has been suspended or revoked. The department shall also promulgate rules for the assessment of fees for instructor training courses.

1024. Authorized and prohibited functions of medication attendants.

A. The authorized functions of the medication attendant are:

1. Deliver and administer medications ordered by a physician or dentist to residents with the supervision of a registered nurse.
2. Record in the client's chart doses delivered to and/or administered to the client.
3. Chart drug effects and side effects, obtain vital signs as indicated or ordered.
4. Deliver pro re nata, "PRN" , as needed medications when authorized by a Licensed physician, dentist, or registered nurse. This authorization must be documented in writing within twenty-four hours.

B. Prohibited Functions of the Certified Medication Attendant

1. May not give medications by intramuscular, intravenous, or subcutaneous routes.
2. May not administer medications by the oral inhalant aerosol route unless administering a premeasured dosage unit provided by the manufacturer.
3. May not receive or assume responsibility for reducing to writing oral or telephone orders from a physician.
4. May not alter medication dosages as delivered from the pharmacy unless authorized by a physician or dentist.
5. May not administer medications in an acute unit funded or operated by the Louisiana Department of Health and/or the Department of Social Services.

1025. Qualifications of applicants to the drug administration course.

A. Each person accepted to participate in the drug administration course shall be citizen of the United States and a resident of this state and in addition:

1. Must be employed in a facility operated by the Office for Citizens with Developmental Disabilities in a community home for a persons with Developmental Disabilities funded through the Louisiana Department of Health or the Department of Social Services or in intermediate care facilities for the mentally retarded, or be a person who provides in-home Medicaid waiver services to a person with a developmental disability.
2. Must be at least 18 years of age.
3. Must be able to read, write, and comprehend the English Language.
4. Must be free of communicable diseases and in suitable physical and emotional health to administer medications safely.
5. Must have no known record or history of drug abuse or record of conviction of a felony. Must be in compliance with the Americans with Disabilities Act (ADA)
6. There will be no discrimination in selection of medication attendants for reason of race, color, creed, religion, or national origin.

The above **law** was enacted from the Regular Session, 1991, House Bill No. 1258 by Representative Jetson and amended by Regular Session, 1995, House Bill No. 568 by Representative Brun and House Bill No. 2164 by Representative Thomas, Ackal, Alario, Copelin, and DeWitt and Senators Bagneris, Brinkhaus, and Kelly.

B. Guidelines for Certification of Medication Attendant

§901. Overview

A. R.S. 37:1021-1025 authorizes the establishment of a medication administration course for the purpose of training and certifying unlicensed personnel to administer certain medication to residents of intermediate care facilities for people with developmental disabilities (ICFs/DD) and community homes for people with developmental disabilities either operated by the Office for Citizens with Developmental Disabilities (OCDD) or funded through the Department of Health (LDH); and to individuals in programs/agencies contracting for services with LDH except as prohibited in §911.B.5. Persons who successfully complete the certified medication attendant (CMA) course and demonstrate an acceptable level of competency on a written test and a practical examination are eligible for certification as medication attendants. Use of certified medication attendants (CMAs) on the part of private providers that contract with DHH is strictly voluntary.

B. The guidelines establish:

1. qualifications for instructors and CMA applicants;
2. authorized functions and prohibitions of certified medication attendants;
3. certified medication attendant 60-hour course curriculum;
4. requirements for initial certification and ongoing re-certification of medication attendants and reciprocity;
5. decertification and appeal process;
6. provider responsibilities;
7. role and responsibilities of the Office for Citizens with Developmental Disabilities; and
8. composition and role of Certified Medication Attendant Committee.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:694 (July 1995), amended by the Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1525 (September 2016).

§903. Definitions

A. For the purpose of these CMA guidelines, the following definitions shall apply.

Abuse (adult/elderly)—the infliction of physical or mental injury, or actions which may reasonably be expected to inflict physical injury, on an adult by other parties, including but not limited to such means as sexual abuse, abandonment, isolation, exploitation, or extortion of funds or other things of value (R.S. 15:503).

Abuse (child)—any of the following acts which seriously endanger the physical, mental, or emotional health and safety of the child:

- a. the infliction or attempted infliction, or, as a result of inadequate supervision, the allowance or toleration of the infliction or attempted infliction of physical or mental injury upon the child by a parent or any other person;

- b. the exploitation or overwork of a child by a parent or any other person;
- c. the involvement of the child in any sexual act with a parent or any other person, or the aiding or toleration by the parent or the caretaker of the child's sexual involvement with any other person or of the child's involvement in pornographic displays, or any other involvement of a child in sexual activity constituting a crime under the laws of this state (*Children's Code*, article 1003).

Authorized Instructor—a registered nurse (RN), with a minimum of one-year experience working with people with developmental disabilities, who has completed the training for instructors, and has a current authorization by OCDD to teach the 60-hour medication attendant course.

CMA Applicant—an employee of an intermediate care facility for people with developmental disabilities or an in-home Medicaid home and community-based service who is enrolled in the 60-hour course curriculum.

Certified Medication Attendant (CMA)—the designation given an employee who has successfully completed the 60-hour course and passed the OCDD initial certification exam and has been issued a certificate by OCDD.

Department—the Louisiana Department of Health (LDH).

Exploitation (adult/elderly)—the illegal or improper use or management of the funds, assets, or property of a person who is aged or an adult with a disability, or the use of power of attorney or guardianship of a person who is aged or an adult with a disability for one's own profit or advantage (R.S. 15:503).

Extortion (adult/elderly)—the acquisition of a thing of value from an unwilling or reluctant adult by physical force, intimidation, or abuse of legal or official authority (R.S. 15:503).

Falsification of Participant Medical Records—includes, but is not limited to, falsification of time, dosage, date, amount, and documentation of prescribed treatment that did not occur.

Falsification or Alteration of CMA Certificate—includes, but is not limited to, altering expiration date, CMA name, OCDD coordinator's signature, or attempting to use another person's certificate.

HCBS (Home and Community-Based Services)—one or more of the following services:

- a. *personal care attendant services*—services required by a person with a disability in order to become physically independent or to remain in or return to the community;
- b. *respite care services*—the temporary care and supervision of a person with a disability or an infirm elderly person so that the primary caregiver can be relieved of such duties. Respite care services may be performed either in the home of the person with a disability or infirm elderly person or in a facility owned by the home- and community-based service provider who provides respite care services. For the purposes of this Section, person with a disability shall mean a person with a physical, mental, or medical condition or an adult who requires assistance with activities of daily living;
- c. *supervised independent living services*—necessary training, social services, and medical services to enable a person who has mental illness or who has developmental

disabilities and who is living in congregate or individual apartments to live as independently as possible in the community;

d. *family support services*—advocacy services, family counseling, including genetic counseling, family subsidy programs, parent-to-parent outreach, legal assistance, income maintenance, parent training, homemaker services, minor home renovations, marriage and family education, and other related programs;

e. *adult day care services*—a group program designed to meet the individual needs of functionally impaired adults which is structured and comprehensive and which provides a variety of health, social, and related support services in a protective setting for a portion of the 24-hour day. The group program shall provide for 10 or more functionally impaired adults who are not related to the owner or operator of the home- and community-based service provider. For the purposes of this Section, *functionally impaired adults* shall mean individuals aged 17 years of age and older who are physically, mentally, or socially impaired to a degree that supervision is necessary;

f. *substitute family care services*—services providing 24-hour personal care, supportive services and supervision to adults who meet the criteria for having a developmental disability;

g. *supported employment*—a system of supports for people with disabilities in regards to ongoing employment in integrated settings. Supported employment can provide assistance in a variety of areas, including:

- i. job development;
- ii. job coaches;
- iii. job retention;
- iv. transportation;
- v. assistive technology;
- vi. specialized job training; and
- vii. individually tailored supervision;

h. *monitored in-home caregiving*—services provided by a principal caregiver to a client who lives in a private unlicensed residence. The principal caregiver shall reside with the client, and shall be contracted by the licensed HCBS provider having a monitored in-home caregiving service module.

Home- and Community-Based Service Provider—an agency, institution, society, corporation, person or persons, or any other individual or group that provides one or more home- and community-based services as defined in this Section. The term *home- and community-based service provider* shall not include any of the following:

a. any person, agency, institution, society, corporation, group, or entity that solely prepares and delivers meals, that solely provides sitter services, or that solely provides housekeeping services;

b. any person, agency, institution, society, corporation, group, or entity who provides gratuitous home- and community-based services;

c. any individual licensed practical nurse or registered nurse who has a current Louisiana license in good standing, and who provides personal nursing services in the home to an individual, provided that the nurse has contracted with the individual or family for such services and payment of such services;

d. staffing agencies which supply contract workers to a health care provider licensed by the department;

e. any person who is employed as part of a department authorized self-direction program (R.S. 40:2120.2).

ICF/DD (Intermediate Care Facility for People with Developmental Disabilities)—an institution (or distinct part of an institution) that:

a. is primarily for the diagnosis, treatment, or rehabilitation of people with developmental disabilities or persons with related conditions; and

b. provides, in a protected residential setting, ongoing evaluation, planning, 24-hour supervision, coordination, and integration of health or rehabilitative services to help each individual function at his or her greatest ability (CMS 42 CFR 435.1009).

Institutional Abuse or Neglect—any case of child abuse or neglect that occurs in any public or private facility that provides residential child care, treatment, or education (*Children's Code*, article 603).

Misappropriation of Property—to take possession, without permission, of any and all of an individual's personal belongings.

Neglect (adult/elderly)—the failure, by a caregiver responsible for an adult's care or by other parties, to provide the proper or necessary support or medical, surgical, or any other care necessary for his/her well-being. No adult who is being provided treatment in accordance with a recognized religious method of healing in lieu of medical treatment shall, for that reason alone, be considered to be neglected or abused (R.S. 15:503).

Neglect (child)—the refusal or failure of a parent or caretaker to supply the child with necessary food, clothing, shelter, care, treatment, or counseling for any injury, illness, or condition of the child, as a result of which the child's physical, mental, or emotional health and safety is substantially threatened or impaired. Whenever, in lieu of medical care, a child is being provided treatment in accordance with the tenets of a well-recognized religious method of healing which has a reasonable, proven record of success, the child shall not, for that reason alone, be considered to be neglected or abused. Disagreement by the parent regarding the need for medical care shall not, by itself, be grounds for termination of parental rights. However, nothing herein shall prohibit the court from ordering medical services for the child when there is substantial risk of harm to the child's health or welfare (*Children's Code*, article 1003).

Office—the Office for Citizens with Developmental Disabilities (OCDD).

Supports and Services Center—a state ICF/DD operated by the Office for Citizens with Developmental Disabilities.

Waiver Program Services—other services approved by the Centers for Medicare and Medicaid Services for home- and community-based waivers for the Louisiana Medicaid Program.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:694 (July 1995), amended by the Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1525 (September 2016).

§905. Applicability

- A. These guidelines shall apply only for certification of medication attendants who are:
1. employed in intermediate care facilities for people with developmental disabilities (ICFs/DD) operated by the Office for Citizens with Developmental Disabilities;
 2. employed in community homes for people with developmental disabilities and/or small or large intermediate care facilities for people with developmental disabilities funded through the Department of Health;
 3. employed in program/agencies, except as prohibited by §911.B.5, contracting with The Louisiana Department of Health for services to people with developmental disabilities; or
 4. employed in programs supporting individuals licensed in HCBS services.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 21:695 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1527 (September 2016).

§907. Qualifications of Applicants to be Medication Attendants

- A. Each person accepted to participate in the medication attendant course must be:
1. a citizen of the United States and a resident of Louisiana;
 2. an employee of an intermediate care facility for people with developmental disabilities or an in-home Medicaid home and community-based service provider agency who is enrolled in the 60-hour course curriculum;
 3. at least 18 years of age;
 4. able to read, write, and comprehend the English language;
 5. be free of communicable diseases and in suitable physical and emotional health to administer medications safely;
 6. have no known record or history of:
 - a. alcohol or drug abuse

NOTE: Must be in compliance with Americans with Disabilities Act.

- b. mental or physical abuse/neglect;

- c. molestation; or
- d. conviction of a felony or other conviction that bars employment in accordance with R.S. 40:1300.53 or other applicable state law.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:695 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1527 (September 2016).

§909. Qualifications of Instructors for Certified Medication Administration Courses

A. A registered nurse (RN) with a minimum of **one year** of clinical experience as a nurse consultant or a full-time nurse for a provider agency providing services to individuals with developmental disabilities in a day-habilitation facility, state facility, ICF/DD or HCBS setting qualifies as an instructor to teach the 60-hour course consisting of 40-hours classroom theory and 20 hours of clinical practical. The RN **may delegate the 20 hours of practical training** to a licensed practical nurse (LPN) with a **minimum of one year of clinical experience** in a developmental disability setting and knowledge of the course.

B. The RN instructor must complete training offered by the OCDD in the curriculum prior to teaching the course.

C. The DHH/OCDD may offer the medication administration instructor course on at least an annual basis, or as determined by the certified medication attendant committee.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:695 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1527 (September 2016).

§911. Authorized and Prohibited Functions of Certified Medication Attendants

A. Authorized functions of the certified medication attendant:

1. deliver medications ordered by a physician, dentist, or authorized prescriber to individuals for self-administration verifying with the medication administration record, the correct individual, dosage, medication name, route, and time;
2. deliver and administer medications ordered by a physician, dentist, or authorized prescriber to individuals with the supervision of a registered nurse, as defined in LAC 46:XLVII.3703.A, verifying with the medication administration record, the correct individual, dosage, medication name, route, and time;
3. administer oral medications, enemas, douches, ointments, pre-measured oral inhalant aerosols, and suppositories unless otherwise indicated;
4. record in the individual's chart:
 - a. doses delivered to and/or administered to the individual;
 - b. effectiveness of the drug;

- c. any adverse effect of the drug;
 - d. appropriate vital signs as indicated by the physician order and/or knowledge of the drug; and
 - e. may transfer prescribed medication information to a medication administration record (MAR); may transfer medication information using a pre-printed pharmacy label indicating the correct individual, dosage, medication name, route, and time;
5. administer prescribed pro re nata (PRN), or as needed, medications when authorized by a licensed physician, dentist, authorized prescriber, or registered nurse. The authorizing health care professional must document the authorization in writing within 24 hours.

B. Prohibited functions of the certified medication attendant:

- 1. may not give medications by intramuscular, intravenous, or subcutaneous routes;
NOTE: This **does not include finger sticks for routine capillary blood glucose monitoring**. The CMA may perform routine capillary blood glucose monitoring for clients who do not require sliding scale insulin. This also does not include epinephrine pen usage for emergency situations.
- 2. may not administer medications by the oral inhalant aerosol route unless administering a premeasured dosage unit provided by the manufacturer;
- 3. may not receive or assume responsibility for reducing to writing oral or telephone orders from a physician, dentist, or authorized prescriber;
- 4. may not alter medication dosages as delivered from the pharmacy unless authorized by a physician, dentist, or authorized prescriber. Alteration of a medication dosage may include giving more or less than the dosage ordered or crushing, cutting or diluting without an order to do so by the physician, dentist or authorized prescriber;
- 5. may not administer medications in an acute care setting, including those funded by DHH and/or operated by the OCDD;
- 6. may not administer any medications when there is indication that the medication has been inappropriately dispensed by the pharmacist or mishandled by other persons;
- 7. may not delegate medication administration to others.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:695 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1528 (September 2016).

§913. Certified Medication Attendant Course Curriculum

A. Each applicant must complete a 60-hour course to become a certified medication attendant.

1. The course curriculum is 40 hours of classroom theory to include at a minimum, instruction in the following topics:

- a. legal aspects;
- b. roles and responsibilities of drug administration;
- c. definitions;
- d. terminology;
- e. classification of drugs;
- f. measurement;
- g. identification;
- h. effects and side effects;
- i. distribution and route;
- j. care and handling of drugs;
- k. skills-tasks to be completed for competency; and
- l. documentation.

2. Twenty-hour practical may consist of 10 hours of classroom demonstration and 10 hours on the unit for hands-on experience. The applicant must attain proficiency in the following 26 skill areas, either by actual demonstration, or by verbally demonstrating to the satisfaction of the licensed nurse:

- a. hand washing;
- b. oral medications;
- c. liquid medications;
- d. topical medications;
- e. eye medications;
- f. ear drops;
- g. capillary blood glucose monitoring;
- h. rectal suppositories;
- i. vaginal suppositories/cream;
- j. disposable enemas;
- k. disposable douches;
- l. counting pulse;
- m. counting respirations;
- n. taking blood pressure;

- o. taking oral temperature;
- p. taking rectal temperature;
- q. taking axillary temperature;
- r. taking tympanic temperature;
- s. premeasured transdermal patches;
- t. nasal atomizer;
- u. oral powdered medications;
- v. charting;
- w. crushing tablets;
- x. rectal creams;
- y. premeasured dosage unit provided by the manufacturer of an oral aerosol inhalant;
- z. limited sublingual medications.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:696 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1528 (September 2016).

§915. Certification Requirements and Process

A. CMA certificates issued after rule promulgation will expire two years from the last day of the month that the certificate was printed.

1. The agency administrator/representative must complete Form CMA - 1, Profile Sheet, for each employee CMA applicant, acknowledging that all the qualifications outlined in §907 are met prior to the applicant attending the course.

2. The CMA applicant must complete the 60-hour course: 40 hours of classroom theory and 20 hours of practical with a minimum of 10 of those hours conducted in the work place.

3. The CMA applicant must demonstrate proficiency in the 26 skill areas to pass the practical portion of the course. An RN or LPN must administer the practical. Proficiency may be either verbal or physical demonstration. A pass/fail grade shall apply.

4. After completion of the 60-hour course, the CMA instructor completes Form CMA-2, initial exam and certification request, and sends it to the regional coordinator to request applicant(s) be scheduled for the written OCDD CMA certification exam. Form CMA-2 must be attached to the Form CMA-1, profile sheet, for each applicant. All forms must be received by the regional coordinator before an exam date can be scheduled.

5. The regional coordinator will:

- a. establish a test date;

b. notify the central office CMA coordinator to mail or email an electronic version of the exam that cannot be modified to the regional coordinator (The exam consists of 50 questions at 2 points each for a total possible score of 100 points.);

- c. administer the test;
- d. return test(s) to the central office coordinator for grading and scoring;
- e. notify CMA instructors as to applicants' scores;
- f. notify agency about applicants' scores;
- g. mail certificates to the agency;
- h. assist CMA instructors regarding any questions; and
- i. maintain copies of all forms submitted to the central office coordinator.

6. The central office coordinator will:

- a. grade each test and determine test score:
 - i. a test score of 80 is required to pass the exam;
 - ii. a test score between 70 and 78 allows the test to be retaken once without repeating the course;
 - iii. a test score below 70 requires a repeat of the entire 60-hour course.
- b. send the regional coordinator the exam scores and certificates.

7. Upon passing the OCDD CMA certification exam, the applicant is designated as a CMA.

8. The central office coordinator will issue two certificates; one for the CMA, and one for the requesting provider agency.

9. The certificate shall include at least the following:

- a. name of CMA;
- b. expiration date;
- c. signature of central office coordinator.
- d. an embossed seal;
- e. the signature of the assistant secretary of OCDD; and
- f. the official logo for the OCDD.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:696 (July 1995), amended LR 23:1147 (September 1997), amended by the Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1529 (September 2016).

§917. Re-Certification Requirements and Process

A. Recertification is required **every two years**. Each CMA must be recertified. The requirements for re-certification are:

1. **Every two years** a CMA must complete a **total of nine hours** of in-service training. **Two of the nine** hours must **directly relate to the agency's medication administration policy and procedure**. The remaining seven hours of in-service must relate to medication administration. A CMA working in multiple agencies may combine training to meet these requirements with the exception that the two-hour training on agency medication administration policy and procedure is required for each employer. Each agency must have documentation of each CMA's required nine hours of in-service training;

2. **Annually**, the CMA must pass with proficiency, either by **physical or verbal** demonstration, the **26 skills on the practical checklist**. The annual cycle is based on the last day of the month that the certificate was printed. If a CMA changes employers within the certification period and training records are not available for the first year, the new employer must determine competency by assessing the 26 skills upon hire, in addition to meeting these requirements for re-certification.

B. Upon successful completion of these requirements the CMA instructor sends Form CMA 3a. and Form CMA 3b. to the regional office/ developmental center coordinator requesting re-certification of each CMA. The regional office/developmental center coordinator forwards information to the central office coordinator.

C. The central office coordinator issues two certificates to the regional office/developmental center coordinator for dissemination. One certificate is for the CMA and the other is for the requesting provider agency.

D. The re-certification requirements must be met prior to the month of expiration of the CMA's certification.

E. A CMA who **has not worked directly** with medication administration in a facility, program, or agency for individuals with developmental disabilities for 24 months or more must take the OCDD CMA state exam again and pass with proficiency the 26 skills checklist. If the CMA does not pass the state exam, then the CMA must repeat the 60-hour course and pass the exam prior to being recertified. Failure to pass the state exam will result in de-certification.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 21:697 (July 1995), amended LR 23:1147 (September 1997), amended by the Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1529 (September 2016).

§919. Decertification of Medication Attendants

A. Decertification shall occur under the following conditions:

1. falsification of participant medical records as defined in these regulations;
2. found guilty of abuse, neglect or cruelty to the infirmed as defined in these regulations;

3. found guilty of misappropriation of a resident's property as defined in these regulations;
4. falsification or alteration of CMA certificate issued by the office as defined in these regulations;
5. falsification of CMA qualifications;
6. failure to meet CMA qualifications;

B. Decertification may occur under the following conditions:

1. Failure of CMA to obtain re-certification requirements results in decertification. The CMA may be reinstated if the re-certification requirements are met within six months of expiration of the certificate. During this six-month period the CMA's authorized functions shall be suspended;

2. Unsatisfactory performance of CMA reported by a licensed nurse, either RN or LPN, can result in either a temporary suspension of the CMA's medication administration privileges or decertification. The RN may choose to suspend CMA medication administration privileges not to exceed three months and provide training during which time the CMA may administer medications only under RN or LPN direct observation. After completion of designated suspension and training, the RN reserves the right to re-instate medication administration privileges or decertify the CMA. If decertified, the CMA must repeat the 60-hour course and retake the OCDD CMA certification exam. The reinstatement of CMA medication administration privileges does not extend the expiration date of the certificate.

C. Based on the aforementioned criteria, the RN in consultation with the agency administrator makes the decision to decertify the CMA.

D. The RN/CMA instructor sends a confidential letter and Form CMA 4 - Decertification Form to both the CMA and the central office coordinator identifying the reasons for decertification of the individual.

E. A copy of the decertification letter and Form CMA 4 along with pertinent documentation is maintained in the provider's records.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:697 (July 1995), amended by the Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1529 (September 2016).

§921. Appeal Process

A. A CMA who has had privileges suspended or has been decertified has the right of appeal.

B. Notice of Violations. When there are substantiated charges against the CMA, either through oral or written evidence, the OCDD will notify the individual(s) implicated in the investigation of the following information by certified mail:

1. the nature of the violations, and the time and date of each occurrence;
2. the state's intent to report these violations to the CMA registry; and
3. The right to request an informal discussion and/or the right to an administrative hearing.

C. Right To An Informal Discussion. When a CMA feels that he/she has been wrongly accused, the following procedure should be followed:

1. Within 15 calendar days of the receipt of the office's notice of violation, the CMA may request an informal discussion.
2. Such request must be made to the office in writing. A meeting will be arranged within 20 days of such a request. The informal discussion is designed to provide an opportunity for:
 - a. the CMA to informally review the situation;
 - b. the agency to offer alternatives based on corrections or clarifications, if any; and
 - c. the CMA to evaluate the necessity for seeking an administrative hearing;
3. During this informal discussion, the CMA will be afforded the opportunity to talk with office personnel involved in the situation, to review pertinent documents on which the alleged violation is based, to ask questions, to seek clarifications, and to provide additional information.

D. Right to Request Administrative Hearing

1. Within 30 calendar days after the receipt of notice of the office's notice of violation or the notice of results of informal discussion, the CMA may request an administrative hearing. Such request must be in writing to the: Office of the Secretary, Attention: Bureau of Appeals. The request must contain a statement setting forth the specific charges with which he/she disagrees, and the reasons for this disagreement.

2. Unless a timely and proper request is received by the appeals section, the findings of the OCDD shall be considered a final and binding administrative determination. Notification will then be entered to the CMA registry.

E. Basic Provisions. The administrative hearing shall be conducted in accordance with the Louisiana Administrative Procedure Act, R.S. 49:965 et seq., and the provisions set forth in the procedures described therein.

F. Right to Counsel. Any party may appear and be heard at any appeals proceeding through an attorney at law or through a designated representative.

G. Appearance In Representative Capacity

1. A person appearing in a representative capacity shall file a written notice of appearance on behalf of a provider:
 - a. identifying himself by name, address and telephone number; and
 - b. identifying the party represented; and
2. Such person shall have a written authorization to appear on behalf of the provider.

H. Preliminary Conference

1. Although not specifically required, the appeals bureau may schedule a preliminary conference. The purposes of the preliminary conference include but are not limited to the following:

- a. clarification, formulations and simplification of issues;
- b. resolution of matters in controversy;
- c. exchange of documents and information;
- d. stipulations of fact so as to avoid unnecessary introduction of evidence at the formal review;
- e. the identification of witnesses; and
- f. such other matters as may aid disposition of the issues.

2. When the appeals bureau schedules a preliminary conference, it shall notify all parties in writing. The notice shall direct any parties and their attorneys to appear at a specified date, time, and place.

I. Results of Preliminary Conference

1. Where the preliminary conference resolves all or some matters in controversy, a summary of the findings agreed to at the conference shall be provided by the administrative law judge.

2. Where the preliminary conference does not resolve all matters in controversy, an administrative hearing shall be scheduled on those matters still in controversy. The hearing shall be scheduled within 30 calendar days following the completion of the preliminary conference, or at a time mutually convenient to all parties.

J. Notice of Administrative Hearing. When an administrative hearing is scheduled, the appeals bureau shall notify the CMA and/or his representative and the office representative, in writing of the date, time and place of the hearing. Notice shall be mailed not less than 10 calendar days before the scheduled date of the hearing.

K. Conduct of Hearing

1. The hearing shall be conducted by the administrative law judge from the appeals bureau.
2. Testimony shall be taken only on oath, affirmation, or penalty of perjury.

3. Each party shall have the right to call and examine parties and witnesses; to introduce exhibits; to question opposing witnesses and parties on any matter relevant to the issue even though the matter was not covered in the direct examination; to impeach any witness regardless of which party first called him to testify; and to rebut the evidence against him.

4. Any relevant evidence shall be admitted if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs regardless of the existence of any common law or statutory rule which might make improper the admission of such evidence over objection in civil or criminal actions. Documentary evidence may be received in the form of copies or excerpts.

5. The administrative law judge may question any party or witness and may admit any relevant and material evidence.

6. The administrative law judge shall control the taking of evidence in a manner best suited to ascertain the facts and safeguard the rights of the parties. Prior to taking evidence, the administrative law judge shall explain the issues and the order in which evidence will be received.

7. A party has the burden of proving whatever facts it must establish to sustain its position.

8. The burden of producing evidence to substantiate the written charge(s) will be on the provider of services. Once the burden of producing evidence to substantiate the charges has been met, the CMA and/or his representative shall have the burden of producing evidence answering the charges.

L. Witnesses and Subpoena

1. Each party shall arrange for the presence of their witnesses at the hearing.

2. A subpoena to compel the attendance of a witness may be issued by the administrative law judge upon written request by a party and a showing of the need therefor.

3. A subpoena may be issued by the administrative law judge on his own motion.

4. An application for subpoena duces tecum for the production by a witness of books, papers, correspondence, memoranda, or other records shall be made in writing to the administrative law judge, giving the name and address of the person or entity upon whom the subpoena is to be served. The application shall precisely describe the material that is desired to be produced and shall state the materiality thereof to the issue involved in the proceeding. It shall also include a statement that, to the best of the applicant's knowledge, the witness has such items in his possession or under his control.

M. Continuance of Further Hearings

1. The administrative law judge may continue a hearing to another time or place, or order a further hearing on his own motion or upon showing of good cause, at the request of any party.

2. Where the administrative law judge determines that additional evidence is necessary for the proper determination of the case, he may at his discretion:

a. continue the hearing to a later date and order the party to produce additional evidence; or

b. close the hearing and hold the record open in order to permit the introduction of additional documentary evidence. Any evidence so submitted shall be made available to both parties and each party shall have the opportunity for rebuttal.

3. Written notice of the time and place of a continued or further hearing shall be given except that when a continuance of further hearing is ordered during a hearing, oral notice of the time and place of the hearing may be given to each party present at the hearing.

N. Record of Hearing. A sound recording of the hearing shall be made. A transcript will be prepared and reproduced at the request of a party to the hearing provided he bears the cost of the copy of the transcript.

O. Decision

1. At the conclusion of the hearing, the administrative law judge shall take the matter under submission.

2. The administrative law judge shall prepare a written proposed decision which will contain findings of fact, a determination of the issues presented, a citation of applicable policy and regulations, and an order.

3. The appeals bureau, on behalf of the secretary of the DHH, may adopt the proposed decision or may reject it based upon the record, or it may be remanded to the administrative law judge to take additional evidence. In the latter case, the administrative law judge thereafter shall submit a new proposed decision.

4. The decision shall be final and binding upon adoption on behalf of the secretary, subject only to judicial review by the courts. Copies of the decision shall be mailed to the CMA at his last known address and to any representative thereof.

P. Failure to Appear

1. If a CMA fails to appear at a hearing, a decision may be issued by the appeals bureau dismissing the hearing. A copy of the decision shall be mailed to each party.

2. Any dismissal may be rescinded upon order of the appeals bureau if the CMA makes written application within 10 calendar days after the mailing of the dismissal, and provides evidence of good cause for his failure to appear at the hearing.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:697 (July 1995).

§923. Reciprocity

A. A provider whose employee furnishes documentation as to successful completion of an equivalent medication administration course conducted in another state and meets other criteria stated in these guidelines and successfully passes the 26 skills checklist and the CMA initial certification exam, may on a case-by-case basis be granted reciprocity. The provider agency would complete Form CMA-5, reciprocity request, and mail to the central office OCDD coordinator. The Certified Medication Attendant Committee will review the documentation and determine if the person will be certified as a CMA in Louisiana. If reciprocity is granted, the provider is notified and the central office OCDD coordinator would issue the certificates to the provider.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:699 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1530 (September 2016).

§925. Provider Responsibility

A. There will be no discrimination in selection of medication attendants for reason of race, color, creed, religion, disability, as defined in R.S. 51:2232(11), or national origin.

B. Each provider shall maintain records on each CMA. The records must include:

1. the current monitoring skills checklist required for certification and re-certification;
2. a copy of the current certificate issued to the CMA by the central office coordinator. The second copy must be provided to the CMA;

3. documentation of annual successful completion of the 26 skills checklist and completion every two years of continuing education necessary for re-certification of CMA.

C. The provider shall have policies and procedures in place regarding medication administration processes.

D. The provider is legally responsible for the level of competency of its personnel and for ensuring that unlicensed staff administering medication have successfully completed the medication administration course curriculum. Additionally, the provider is responsible for maintaining re-certification requirements of its CMAs and ensuring that its CMAs perform their functions in a safe manner.

E. The provider is responsible for providing access to RN supervision of staff through employment or through a contract with a registered nurse. This nurse should review all medication errors on a monthly basis.

F. The provider shall conduct thorough employment checks including verification of CMA certification.

G. The provider is responsible for contacting the central office to verify that a CMA is in good standing prior to employing a CMA certified by another provider. The central office coordinator will send the provider Form CMA-6 verifying that the CMA is in good standing. Form CMA-6 must be maintained on file in the provider's records. The CMA would be responsible for providing a copy of his or her certificate to the provider.

H. If a CMA changes employers within the certification period and training records are not available for the first year, the new employer must determine competency by assessing the 26 skills upon hire, in addition to meeting the requirements for re-certification.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:699 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1530 (September 2016).

§927. Office for Citizens with Developmental Disabilities Responsibilities

A. The OCDD shall ensure the integrity of the medication administration course by:

1. implementing the CMA Law, R.S. 37:1021-1025;
2. revising guidelines;

3. issuing tests for initial certification of CMAs;
4. administer the tests for initial certification of CMAs;
5. grading the tests for initial certification of CMAs;
6. maintaining the originals of written examinations with scoring;
7. maintaining a roster of nurses who complete the CMA instructor training;
8. issuing certificates;
9. offering an instructor's course;
10. convening the Certified Medication Administration Committee as needed;
11. verifying CMAs are in good standing; and
12. maintaining a CMA registry.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:700 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1530 (September 2016).

§929. The Certified Medication Administration Committee

A. Composition of committee as determined by the assistant secretary of OCDD:

1. authorized CMA instructors;
2. central office coordinator;
3. two OCDD regional coordinators;
4. an individual or individual's representative (e.g., family member), and
5. other representatives as determined by the office.

B. Responsibilities of the committee:

1. Provide input regarding CMA program aspects such as guidelines, course curriculum, instructor training;
2. review requests for reciprocity status; and
3. Offer assistance to CMA instructors upon request.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:700 (July 1995), amended by the Louisiana Department of Health, Office for Citizens with Developmental Disabilities, LR 42:1530 (September 2016).

§931. CMA Forms

A. Forms to be used are as follows:

1. Form CMA - 1 is the profile sheet completed by the provider agency's administrator/representative to attest that all qualifications are met for the CMA applicant to attend the 60-hour medication administration course. This form is given to the CMA instructor.

2. Form CMA - 2 is the exam request and initial certification request form completed by the CMA instructor and sent to either the regional office or developmental center coordinator to request the office schedule CMA applicant(s) for the OCDD CMA certification exam. Form CMA - 1 must be attached to the CMA - 2 for each CMA applicant to be scheduled for the test. For those applicants that pass the test, the office will send the certificates to the CMA instructors.

3. Form CMA - 3a. and 3b. are the re-certification requests completed by the CMA instructor acknowledging that all recertification requirements are met. The CMA instructor sends these forms to the central office coordinator for issuance of certificates.

4. Form CMA - 4 is the decertification form completed by the CMA instructor identifying the reasons for decertifying the CMA and sent to the central office coordinator. Form CMA - 4 is also sent to the CMA along with a confidential letter. A copy of Form CMA - 4 must be maintained in provider agency records.

5. Form CMA - 5 is the reciprocity request form the provider agency would complete for employees that furnish documentation of successful completion of an equivalent medication administration course from another state. This form is sent to the central office coordinator for review and determination.

6. Form CMA - 6 is the form completed by the central office coordinator verifying a CMA is in good standing. This form is sent to provider agencies who employ a CMA in good standing certified by another agency. Form CMA - 6 must be keep on file in the provider records.

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:1021-1025.

HISTORICAL NOTE: Promulgated by the Department of Health and Hospitals, Office for Citizens with Developmental Disabilities, LR 21:700 (July 1995).

C. RESPONSIBILITIES AND PROHIBITED FUNCTIONS OF THE MEDICATION ATTENDANT

RESPONSIBILITIES:

The significance of your role as a staff person designated to administer medications to the individuals in your agency's program should never be underestimated. It is important that you, as a direct care worker, understand all the legal issues, roles and responsibilities to which you have been assigned.

Many of the individuals in your agency's program will need prescribed medications and drugs which you may not be familiar with and which are potentially dangerous.

When a provider agency such as the one you work in, assumes responsibility for the care and protection of its residents, it is required by law to make special efforts to protect their safety. Serious medication errors are often made even in relatively uncomplicated family settings. Given the complexity of a typical service setting (many different staff and residents, staff turnover, etc.) , you can see that a ***systematic set of rules, regulations and laws is necessary to ensure that appropriate procedures are carried out on a consistent basis, and that your specific authorized and prohibited functions and responsibilities as outlined in this manual, the laws and other regulations will serve to protect you and your agency from errors which would have serious legal consequences.***

As you recall from your previous review of Act 877

The Authorized functions of the medication attendant are:

1. Deliver and administer medications ordered by a physician or dentist to residents with the supervision of a registered nurse.
2. Record in the client's chart doses delivered to and/or administered to the client.
3. Chart drug effects and side effects, obtain vital signs as indicated or ordered.
4. Deliver pro re nata, "PRN" , as needed medications when authorized by a Licensed physician, dentist, or registered nurse. This authorization must be documented in writing within twenty-four hours.

The Prohibited Functions of the Certified Medication Attendant are:

1. May not give medications by intramuscular (IM), intravenous (IV), or subcutaneous routes.
2. May not administer medications by the oral inhalant aerosol route unless administering a premeasured dosage unit provided by the manufacturer.
3. May not receive or assume responsibility for reducing to writing oral or telephone orders from a physician.
4. May not alter medication dosages as delivered from the pharmacy unless authorized by a physician, dentist.
5. May not administer medications in an acute care unit funded or operated by the Louisiana Department of Health and/or the Department of Social Services.

In addition to the authorized and prohibited functions as outlined in Act 877, and bearing in mind the necessity of assisting individuals who have developmental disabilities develop their abilities in various fields of activity, the following concepts are to be observed:

1. A resident, if capable, is to be encouraged to self-administer medication.
2. A resident and/or the parents of a resident under 18 years of age have a right to know what medication he/she is receiving, its actions and adverse reactions.
3. Only medications which a physician, dentist or other authorized prescriber has prescribed or approved for the resident should be given. prescriber has prescribed or approved for the resident should be given.
4. Medications should not be given for the convenience of the staff, but only for the benefit of the individual.
5. Medications which do not show specific effects should be brought to the attention of the prescribing physician.
6. A positive approach should be taken when giving medications. If the use of physical force is necessary to administer medication, this situation must be brought to the physician and supervisor's attention.
7. All medication changes should be discussed with the residents and/or parents of a resident under the age of 18.

PARTICIPANTS SHOULD REVIEW THEIR OWN AGENCY'S POLICIES AND PROCEDURES FOR ANY ADDITIONAL RESPONSIBILITIES.

Answer Self -Test Questions - Introduction

CERTIFIED MEDICATION ATTENDANT COURSE

TRAINEE MANUAL

PART 1

LESSON CONTENT

REVISED – 1998

REVISED – FEBRUARY 2018

LESSON 1:

RESPONSIBILITIES IN THE AREAS OF MEDICATION ADMINISTRATION AND LEGAL MANDATES

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Discuss who is responsible for administration of medication
2. Discuss medication standards
3. Describe the purpose of medication legislation
4. Discuss legal obligations as it relates to neglect and malpractice
5. Discuss regulations pertinent to medication labeling

Who is Responsible?

Doctors, other authorized prescribers, pharmacists, nurses and other specified residential staff (CMAs) are all members of a **team** that are responsible for giving individuals the correct medications. All staff must be aware of their legal responsibilities regarding the administration of medication. You must therefore understand how to properly give (administer) medications and record their actions (effects).

In addition to understanding the correct method of administration and documentation, the staff must be aware of policies and procedures regarding omitted and refused medications. The material in this lesson will be supplemented with your agency's specific policies and procedures. Follow your agency's policies and procedures. **ALWAYS** follow your agency's policies.

I. People Responsible for Medication

- A. **Physicians and other authorized prescribers**-- determine the need for and order medication.
- B. **Pharmacists**--fills the order, provides information about medications to the staff and to the individuals, performs quarterly drug reviews to ensure that medication administration, storage of medications, medication use and appropriateness of therapy are correct.
- C. **Registered nurses, Licensed Practical Nurses**--administer medications ordered by the physician or other authorized prescriber, transfer telephone orders to writing, monitor the accuracy of medication administration to clients and provide education to staff on medications.

D. **Certified Medication Attendants**--Administer only those medications for which they are so authorized to administer by law.

1. Responsibilities **before** administering medication:
 - a. Check the original medication order and Medication Administration Record (MAR) for accuracy.
 - b. Prepare the medication for administration
 - c. Use the proper equipment.
 - d. Prepare the medications accurately by using the "Rule of Three" (discussed in Lesson 4).
2. Responsibilities **during** the administration of medications:
 - a. Identify the individual (use Photo identification).
 - b. Explain the procedure to the individual.
 - c. Administer the medication correctly. (Pour only one medication at a time.)
3. Responsibilities **following** administration of medications:
 - a. Record (document) the administration of the medication on the Medication Administration Record (MAR).
 - b. Clean the equipment.
 - c. Observe and record (document) the effects of the medication.
 - d. Record (document) and report the adverse effects or poor response to the medication.

LEGAL MANDATES

I. Medication Standards and Legislation

- Standardization is needed to ensure uniformity of the purity and potency of medication. Their primary purpose is to provide standards for identity, strength, and purity of substances used in the practice of health care.
- Medication legislation is designed to protect the public from fraud, false advertising and untested drugs and to regulate the manufacture and dispensing of drugs.

The Federal Food, Drug, and Cosmetic Act, June 25, 1938, spells out regulations concerning the purity, strength, effectiveness, safety, labeling and packaging of medications. **The amendment of 1952** allows certain medications to be dispensed only by prescription and to be refilled only on a doctor's order; it also recognizes over the Counter (OTC) medications as medications that do not require a prescription.

The amendment of 1952 allows certain medications to be dispensed only by prescription and to be refilled only on a doctor's order; it also recognizes over the Counter (OTC) medications as medications that do not require a prescription.

The labeling aspect is an important part of this act. Warning statements must appear on the label of certain medications. For example, laxatives must bear a statement that "such medications should not be taken in the presence of abdominal pain or cramps and that they may be habit forming". Requirements like these go a long way in protection of the public.

II. Legal Obligations of Medical Personnel

- A. State and Federal regulation set forth the **rights of individuals**.
- B. Agencies and all personnel are required to respect **individuals' rights** which include: (Not to be confused with the 6 Rights of Medication Administration.)
 - 1. The right to refuse medication and treatment.
 - 2. The right to be informed on consequences of refusing medication and treatment.
 - 3. Freedom from physical and mental abuse and neglect.
 - 4. Freedom from restraint without a physician's written order.
 - 5. The right to privacy.
 - 6. The right to confidential treatment.
- C. All individuals are legally protected from:
 - 1. Libel and slander.
 - 2. Assault and battery.

III. MALPRACTICE AND NEGLIGENCE

- A. **Malpractice** is an act of negligence as applied to a **PROFESSIONAL** person, such as a physician, nurse or dentist.
 - 1. Malpractice is any improper or injurious practice or any unskillful or faulty medical treatment.
- B. **Negligence** is performing an act that a reasonably prudent person under similar circumstances would not do, or failing to perform an act that a reasonably prudent person under similar circumstances would do.
 - 1. By law, individuals can expect safe and efficient care.
 - 2. Individuals expect medication personnel to administer medication accurately.
 - 3. The residential staff is obligated to perform care that meets minimum standards.
- C. Individuals are protected from health care negligence/malpractice by a law called "**Duty of Care.**"
 - 1. The residential staff is negligent if **REASONABLE** care is **NOT** given or **UNREASONABLE** care **IS** given.

D. Both residential staff and individuals are protected by the standard of **"Reasonable Care."**

1. Individuals can expect "reasonable care." Reasonable care is doing only that which you have been trained to do; acting as others would act in the same or similar situations.
2. Residential staff are required to provide care based on this minimum standard of **"Reasonable Care."**

E. To avoid being negligent:

1. Do only those things you **have been trained** to do.
2. Observe the legal rights of every individual.
3. Complete all records carefully.
4. Be informed about the medications including their actions and adverse effects.
5. Follow the policies of your agency.

F. Examples of negligence include:

1. Leaving a dependent individual unattended in a shower or bath.
2. Giving the wrong medication to an individual.
3. Failing to report an observation or adverse effect to the staff nurse that later has profound consequences for the individual's health.
4. Causing an injury by using defective/broken equipment or supplies.
5. Failing to give a medication at the prescribed time (Unless otherwise instructed by physician or RN due to extenuating circumstances.)

G. Accountability for negligence:

1. All persons are accountable for their own actions.
2. Supervisory personnel are accountable for the actions of whomever they direct and supervise.
3. The agency is legally obligated to ensure all individuals are free from physical and mental abuse and restraints.

H. Legal action:

1. May result from claims of negligence and/or malpractice.
2. Action can be brought against the agency, supervisory personnel, and/or an individual who is considered negligent.
3. If the residential staff had "no intent to harm," then a financial settlement may be made.
4. If the individual proves an "intent to harm" or the individual's injury is severe, the residential staff person may be fired.

5. Criminal action may also be taken if a crime is committed, such as:
 - a. **Assault:** a threat or attempt to make bodily contact with another person without that person's consent.
 - b. **Battery:** an assault (threat) that is carried out.
 - c. **Neglect:** omission of any reasonable precaution, care or action.
 - d. **Misuse of controlled substances:** The use of a controlled substance for any other purpose than the prescribed purpose.

IV. Ethical Considerations

- A. A "**Code of Ethics**" is a voluntary set of rules that influence relationships between people based on dignity and respect for each individual's rights.
- B. Words that describe ethical behavior:
 1. Honesty
 2. Sincerity
 3. Loyalty
 4. Dependability
- C. Unethical behavior results in:
 1. Discipline of the worker or group
 2. Feelings of guilt
- D. "Golden Rule" for ethical behavior: "Do unto others as you would have them do unto you, or one of yours."

V. Purpose of the Individual's Record (Chart)



- A. Provides a complete medical picture of the individual
- B. Provides a legal record that is admissible as evidence in a legal action

VI. Legal and Ethical Considerations Concerning Charting

- A. Charts contain **confidential** information that is available only to people authorized by the agency.

- B. Entries should present an accurate, readable picture of the individual's care.
- C. **Legally**, the chart is considered accurate. Every medication given must be charted. Residential staff are held responsible for any medications signed out but not charted. **Refer to the six rights of administering medications that are listed in Lesson 6.**
- D. Your signature on an entry means **that you assume responsibility for the entry.** You administered or supervised the administration of the medication, made the observation, knew that the care was given as charted.
- E. State law or regulation determines the length of time records must be kept.
- F. PRN medications must be documented. Every entry must be signed and dated. **Results** of PRN medication must also be documented.

VII. Medication Errors

- A. Violation of "**reasonable care**," often results from not following the "six rights" of medication administration.
 - 1. The "**six rights**" of medication administration are:
 - 1) Give the Right Medication
 - 2) Give the Right Dose
 - 3) Give the medication to the Right Individual
 - 4) Give medication by the Right Route
 - 5) Give medication at the Right Time
 - 6) Provide the Right Documentation
- B. Errors in medication administration can be caused by:
 - 1. Lack of concentration
 - 2. Lack of knowledge
 - 3. Failure to follow correct procedure
 - 4. Poor communication
 - 5. Performing a job beyond your scope of duty
- C. Responsibilities regarding medication errors:
 - 1. Truthfully reporting an error is better legally than trying to cover it up.
 - a. Individual can be protected from harmful effects by immediate action.
 - b. Situation can be reviewed and similar errors avoided in the future.

2. **REPORTING**--the **FIRST** thing to do if you make or discover a medication error is **REPORT IT TO YOUR STAFF NURSE.**

- a. The staff nurse will notify the physician and receive orders.
- b. The staff nurse will probably tell you to observe the individual and complete an incident report.

3. **OBSERVING THE INDIVIDUAL FOR UNDESIRABLE EFFECTS:**

- a. Check the drug information for desired action, adverse effects, and toxic effects of the medication that was administered. (**Lesson 8** will list the various resources for obtaining information on medications)
- b. Watch for general symptoms, such as nausea, vomiting, difficult breathing, dizziness, itching, hives, drowsiness, and others listed in the drug information under the administered drug.
- c. Record (document) and report all information that is pertinent to the individual's care.

4. **DOCUMENTING**

a. **Medication Error Report**

- i. Completed by whomever is the most familiar with the situation, usually the person who committed or discovered the error.
- ii. Report is sent to the staff nurse or the agency director, and is not put in the chart. Follow your agency's policy.
- iii. Medication Error Reports are reviewed periodically by the agency director and the staff nurse, who designs plans that will avoid future errors.
- iv. Answer all of the questions on the incident report form.

b. **Informing the individual of the error:**

- i. A physician will decide if the individual is to be informed.
- ii. A physician informs the individual.
- iii. This decision is not the responsibility of the person administering the medication.

The following list of medications are commonly used look-alike and sound-alike drugs. Being familiar with these will assist you in preventing errors.

Note: We will discuss specific drugs later in the course.

COMMONLY USED LOOK-ALIKE AND SOUND-ALIKE DRUGS

A

Achromycin-----Aureomycin
ADC-----AVC

Afrin-----Aspirin
Aldactone-----Aldactazide
Aldoril-----Aldomet

Ambenyl-----Aventyl
 Ambenyl-----Amvical
 Aminopyrine-----Aminopterin
 Ananase-----Orinase
 Ananase-----Tolinase
 Anusol-----Aquasol
 Aralen-----Arlidin
 Arlidin-----Aeroline
 Atarax-----Enarx
 Azotrex-----Afrodex

B

Belladonna-----Belladenal
 Benadryl-----Belladenal
 Benadryl-----Bentyl
 Benadryl-----Benylin
 Benemid-----Beminal
 Bentyl-----Aventyl
 Benuron-----Enduron
 Betalin-----Benylin
 Bicillin-----V-Cillin
 Bontril-----Vontrol
 Brondecon-----Bronkotabs
 Butibel-----Butabell
 Butibel-----Butisol
 Butigetic-----Butagesic

C

Calamine-----Calomel
 Calcidin-----Calcidrine
 Calurin-----Saluron
 Capla-----Keflin
 Cedalanid-----Acetanilid
 Chloromycetin-----Chlor-Trimeton
 Codeine-----Cordran
 Combid-----Combex
 Compazine-----Compocillin
 Compocillin-----Ampicillin
 Consotuss-----Cotussis
 Coramin-----Calamine

D

Daricon-----Darvon
 Decadron-----Percodan
 Decagesic-----Donnagesic
 Delalutin-----Deladumone

Delta-Dome-----Deltasone
 Demerol-----Dicumarol
 Deprol-----Demerol
 Desbutal-----Desoxyn
 Desoxyn-----Digitoxin
 Dexameth-----Dexamyl
 Dialose-----Dialog
 Dialose-----Dialose
 Digoxin-----Desoxyn
 Dilantin-----Delalutin
 Digitoxin-----Digoxin
 Disophrol-----Isuprel
 Diuril-----Doriden
 Diutensen-----Salutensin
 Diutensen-----Unitensen
 Donnatal-----Dianabol
 Donnatal-----Donnagel
 Doriden-----Doxidan
 Doriden-----Loridine
 Doxan-----Dixidan
 Duragesic-----Duo-Gesic
 Dyazide-----Thiazide
 Dyrenium-----Pyridium

E

Ecotrin-----Edecrin
 Elase-----Alidase
 Elavil-----Aldoril
 Elavil-----Marax
 Enduron-----Eutron
 Equagesic-----Decagesic
 Esimil-----Estinyl
 Esimil-----Ismelin
 Estomul-----Isomel
 Eutonyl-----Eutron

F

Feosol-----Felsol
 Feosol-----Feostat
 Feosol-----Fer-In-Sol
 Feosol-----Festal
 Fostex-----PhisoHex
 Fulvicin-----Furacin

G

Gantrex-----Kantrex
 Gantrisin-----Gantanol
 Garamycin-----Terramycin
 Gevral-----Gevrine

Glucola-----Clural

H

Haldrone-----Haldol
Halodrin-----Haldol
Halotestin-----Halothane
Hiprex-----Herplex
Hyadrine-----Hydergine
Hycomine-----Hycodan

I

Imferon-----Infron
Imuran-----Imferon
Inderal-----Isordil
Indocin-----Lincocin
Isordil-----Isuprel

K

Kaomin-----Kaon
Kaon-----Kao-Con
Kemadrin-----Coumadrin
Keflex-----Keflin
Ketostix-----Ketosox

L

Loridine-----Leritine
Luride-----Loryl

M

Maalox-----Maolate
Maalox-----Marax
Marax-----Atarax
Mebaral-----Mellaril
Mebaral-----Tegretol
Medaprin-----Edecrin
Medaprin-----Ecotrin
Medrol-----Mebaral
Meproamate-----Mepergan
Meproamate-----Mepridine
Mesantoin-----Mestinon
Metherdrine-----Methergine
Methadone-----Maphyton

Methortrexate-----Meproamate
Modane-----Mudrane

N

Nasocon-----Vasocon
Negatan-----NegGram
Nembutal-----Myambutal
Niacin-----Niamid
Nialex-----Nicolex
Nico-Span-----Nitrospan
Nilevar-----Noludar
Nisine-----Visine
Nitroglycerine-----Nitroglyn
Norlestrin-----Novahistine
Norlutate-----Norlutin

O

Omnadin-----Ominpen
Omipen-----Unipen
Orabiotic-----Otobiotic
Orabiotic-----Urobiotic
Oracon-----Oreton
Orase-----Orinase
Oretic-----Oreton
Oridine-----Loridine
Orinase-----Ornade
Ornex-----Ornade
Otalgin-----Auralgan
Otobiotic-----Urbiotic
Ovlin-----Ovulen

P

Palocillin-----Polycillin
Pamcillin-----Polycillin
Pantopon-----Percogesic
Paregoric-----Percogesic
Percodan-----Percobarb
Percodan-----Percorten
Periactin-----Taractan
Periactin-----Percodan
Phenobarbital-----Pentobarb
Persantine-----Persistin
Persantine-----Trasentin
Persantine-----Tranxene
Phenaphen-----Phenergan

Q

Quinidine-----Quinine
Quinora-----Quinolor

R

Rabellon-----Robinul
Regroton-----Hygroton
Rifadin-----Ritalin
Ritalin-----Ismelin

S

Sansert-----Cenasert
Sansert-----Singoserp
Sedatole-----Cidicol
Serenium-----Dyrenium
Spectrocin-----Spartocin
Surfak-----Sur-bex
Synar-----Synalar
Synthroid-----Synthaloid

T

Taractan-----Tinactin
Tedral-----Teldrin
Tegopen-----Tegretol
Tegopen-----TegrinTermaril---
Tepanil-----Termaril
Tepanil-----Terfonyl
Terfonyl-----Toleron
Thiamine-----Thiomerin
Triamcinalone-----Triaminacin
Tuinal-----Tylenol
Tyzine-----Visine

U

Unipen-----Unicap
Unitensen-----Salutensin

V

Vigran-----Wigraine

W

Wyamine-----Wydase

Z

Zactirin-----Saccharin
Zarotin-----Zentron

VIII. Regulations Pertaining to Labeling

A. General Provisions

1. Regulations pertaining to labeling **apply to all medications** not just prescription medications. A common medication like aspirin will have the following information on its label:
 - a. No false or misleading statement.
 - b. Dosages and frequency must be clearly stated and must not be dangerous to health when used as recommended on the label.
 - c. Name, business address, and lot number of the manufacturer.
 - d. An accurate statement of the contents.
 - e. A warning if the medication is habit forming.
 - f. Quantity, kind, and proportion of specific ingredients.
 - g. Directions for use and contraindications, with adequate warnings for:
 - i. children
 - ii. persons with disease conditions
 - h. Expiration date of the medication
2. However, when medications are dispensed in a prescription bottle, some information will be excluded. Check your agency's policy for further information.

B. Controlled Substance Act, 1970

1. **The Comprehensive Drug Prevention and Control Act** was passed by Congress in the fall of 1970. This new statute, commonly referred to as the "**Controlled Substances Act**," is designed to improve the administration and regulation of the manufacturing, distributing, and dispensing of

"MEDICATIONS THAT PRODUCE OR SUSTAIN EITHER MENTAL OR PHYSICAL DEPENDENCE" (habit forming).

TABLE 1.1

**MAJOR FEATURES OF THE FEDERAL COMPREHENSIVE DRUG ABUSE
PREVENTION AND CONTROL ACT OF 1970**

SCHEDULE	CONTROLLED DRUGS (as of 2016)
Schedule I – no accepted medical use <ul style="list-style-type: none"> • has a high abuse potential • no prescriptions may be written for Schedule I substances 	Heroin, LSD, Marijuana
Schedule II - drugs with high abuse potential and accepted medical use.	Narcotics (morphine and pure Codeine), hydrocodone, Adderall® amphetamines, guaifenesin
Schedule III - drugs with moderate abuse potential and accepted medical use.	Moderate and intermediate acting barbiturates Dalmane® Restoril®
Preparations containing codeine plus another drug.	(Tylenol #3® acetaminophen plus codeine)
Schedule IV - drugs with low abuse potential and accepted medical use (prescription needed)	Phenobarbital, chloral hydrate, anti-anxiety drugs (Valium®, Librium®).
Schedule V - drugs with low abuse potential and accepted medical Use/OTC-sign out for drug on the narcotic register.	Narcotic drugs used in limited quantities for antitussive and anti- diarrhea purposes, Donnagel PG® some cough syrups.

NOTE: Tetrahydrocannabinol (THC, marijuana) is still considered a Schedule 1 drug by the DEA, even though some U.S. states have legalized marijuana for personal, recreational or for medical use.

LESSON 2: FUNDAMENTALS OF BASIC PHARMACOLOGY



OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define medication therapy.
2. Name the four sources of medications.
3. Define medication names.
4. Know the most common abbreviations used to designate time and frequency of drug administration.
5. Describe six factors that can influence the effectiveness of a medication.

Medication is an important part of health care for many individuals in group homes. The individuals and residential staff must be knowledgeable regarding the different names, uses, actions and adverse effects of all medications that are being administered. Each individual may react differently to medication. Factors such as health, age, body size and internal functions can and do alter the effectiveness of medications. Residential staff must recognize the limits of their ability and knowledge, and seek the advice and assistance of the staff nurse, pharmacist or doctor when needed.

I. Medication Therapy

Medication therapy may be defined as treatment by the use of substances that **cure, relieve, prevent and diagnose disease**. Many of the medications used today have been in use for thousands of years. Ancient records show that herbs, seeds, barks, and other substances were collected and steeped into potions for treating the sick.

II. Four Sources of Medications

"Fire properly controlled" is "Man's best friend", uncontrolled it's his worst enemy. The same statement might well be applied to drugs. Properly used, drugs are a great blessing to mankind, indiscriminately or improperly used, could cause harm.

Pharmacology is as old as the story of mankind. Humans have always experienced illness and injury. They have searched for the means of combating disease and caring for the wounded. This search for healing techniques marks the progress of civilization.



Mankind's early attempts at using remedies resulted in several discoveries. By observing animals, they learned the **therapeutic** properties of many plants, waters, and muds. The theory that disease was a manifestation of evil spirits resulted in attempts to cure disease by driving out the spirits with noxious materials. This experimentation led to the beginning of medicine, for some of these treatments did recover the patient.

The word "drug" is derived from the Dutch word "droog" meaning dry. Most early drugs were dried plants or plant products. Today, drugs are derived from four main sources:



Pig



Herbs/Plants



Mineral/Calcium



Synthetic/Chemicals

- | | |
|---------------------|-----------------------------------|
| 1. Animal | i.e. insulin, thyroid |
| 2. Plant | i.e. digitalis-digoxin-penicillin |
| 3. Mineral | i.e. calcium-lithium-magnesium |
| 4. Synthetic | i.e. ampicillin-phenobarbital |

Drugs are chemical compounds that act in various ways on the body. They may alter the body's chemical reactions, reverse a disease, relieve symptoms, maintain health, prevent disease, alter a normal process or aid in diagnosis. For example, psychotropic medications alter the body's chemical reactions and birth control pills alter a normal process.

III. Medication Names

Medications are chemicals that have rather long, difficult, chemical names. Consequently, all medications are given a shorter name, known as the **GENERIC** name. When the medication is manufactured, it is given a third name known as the **BRAND**® or **TRADE**® name. Several companies may market the same generic medication, there may be several different trade names for any one medication. The following example will illustrate the various names for phenobarbital.

Chemical Name:	5, 5=phenylethylbarbituric acid
Generic Name:	phenobarbital
Trade Names:	Luminal®, Eskabarb®, Barbita®

The **first letter** of the **Trade Name** is **Capitalized**. The **Symbol**® to the right of the name indicates the name is registered and its use restricted to the manufacturer of the medication who is the legal owner.

A **generic name** is generally **not capitalized**. Presently physicians are encouraged to prescribe generic drugs; they may be less expensive than brand name.

EXAMPLES OF BRAND NAMES AND GENERIC NAMES:

BRAND NAME ®	GENERIC NAME
Achromycin, Sumycin	tetracycline
Acthar	adrenocorticotrophic hormone
Afrin	oxymetazoline
Aldomet	methyldopa
Amoxil	amoxicillin
Antepar	piperazine
Antiminth	pyrantel
Aquasol A	aqueous vitamin A
Aquasol E	aqueous vitamin E
Aqua-mephyton	vitamin K
Aristocort	triamcinolone
Artane	trihexyphenidyl HCl
Aspirin	acetylsalicylic acid
Ascorbic Acid	vitamin C
APC	aspirin, phenacetin and caffeine
Atarax	hydroxyzine HCl
Aventyl	nortriptyline
Baciguent	bacitracin
Benadryl	diphenhydramine HCl
Betapen VK	potassium p penicillin
CeViSol	vitamin C drops
Chloromycetin	chloramphenicol
Cleocin	clindamycin HCl
Cogentin	benztropine mesylate
Compazine	prochlorperazine
Cordran	flurandrenolide
Coumadin	warfarin sodium
Cytomel	sodium liothyronine
Darvon	propoxyphene HCl
Darvon Compound 65	propoxyphene, aspirin, phenacetin & caffeine
Decadron	dexamethasone
Depo-Provera	medroxy-progesterone
Desenex	miconazole
Dexedrine	dextroamphetamine
Diamox	acetazolamide
Dimetane	brompheniramine
Diodoquin	diiodohydroxyquinine

BRAND NAME ®	GENERIC NAME
Diuril	chlorothiazide
Dilantin	phenytoin
Dramamine	dimenhydrinate
Dulcolax	bisacodyl
Elavil	amitriptyline HCl
Empirin	APC (Aspirin, Phenacetin and Caffeine)
Equanil	meprobamate
Equagesic	meprobamate and aspirin
Erythrocin	erythromycin
Feosol	ferrous sulfate
Flagyl	metronidazole
Fluogen	INFLUENZA VIRUS TRI-SPLIT
Furacin	nitrofurantoin
Furadantin	nitrofurantoin
Gantanol	sulfamethoxazole
Gantrisin	sulfisoxazole
Garamycin	gentamycin
Haldol	haloperidol
Ilosone	erythromycin
Isopto Carpine	pilocarpine
Isuprel	isoproterenol
Keflex	cephalexin
Kefzol	cephazolin
Kenalog	triamcinolone
Lanoxin	digoxin
Larodopa	levodopa
Lasix	furosemide
Lincocin	lincomycin HCl
Lomotil	diphenoxylate HCl
Luminal	sodium phenobarbital
Macrochantin	nitrofurantoin
Mandelamine	methenamine mandelate
Marezine	cyclizine
Mellaril	thioridazine HCl
Mephyton	magnesium hydroxide
Minocin	minocycline
Mintezol	thiabendazole
Mycostatin	nystatin
Mysoline	primidone
Navane	thiothixene
Neosynephrine	phenylephrine
Noctec	chloral hydrate
Paregoric	tincture of camphorated opium
Periactin	cyproheptadine
Phenergan	promethazine
Polaramine	dexchlorpheniramine

BRAND NAME ®	GENERIC NAME
Polycillin	ampicillin
Povan	pyrvinium pamoate
Premarin	conjugated estrogens
Principen	ampillicin
Prolixin	fluphenazine
Prostaphlin	sodium oxacillin
Ritalin	methylphenidate
Seconal	secobarbital
Senokot	senna fruit extract
Selsun	selenium sulfide
Sinequan	doxepin
Sudafed	pseudoephedrine HCl
Sumycin	tetracycline
HCl Surfak	dioctyl sulfosuccinate
Talwin	pentazocine and naloxone
Tegretol	carbamazepine
Thorazine	chlorpromazine HCl
Tinactin	tolnaftate
Tigan	trimethobenzamide
Tofranil	imipramine HCl
Tylenol	acetaminophen Unicap,
Theragran	multivitamins (MVI)
Valium	diazepam
V-Cillin K	potassium p penicillin
Veetids	potassium p penicillin
Vibramycin	doxycycline hyclate
Valisone	betamethasone
Visine	tetrahydroxoline HCl
Vistaril	hydroxyzine pamoate
Zarontin	ethosuximide
Xylocaine	lidocaine

IV. Weights and Measurements

Measurement has always been an important part of prescribing and administering medications. **This is so because different amounts of medication present different effects.** Some medications are deadly poisons, but when given in tiny amounts can help relieve disorders. Other medications are useless for therapy unless given in large amounts. Most medications have a certain dosage range, that is, a range of quantities that can produce therapeutic effects. Doctors prescribe an amount within the dosage range depending on how strong an effect is needed and on the individual's age and physical condition. **Doses less than the dosage range do not produce any therapeutic effects. Doses more than the dosage range are harmful to the body and can be fatal.**

To get the desired effects physicians and pharmacists through the ages have tried to make dosages very exact by measuring medications carefully. However, they have not all used the same units of measurement. There are different measurement systems, each having its own units of weight and volume. The three systems of measurement used in ordering medications are **APOTHECARY, METRIC, and HOUSEHOLD SYSTEM.**

Regardless of the system used by the physician and/or pharmacist, medications obtained from the pharmacist are **generally labeled according to the household system.** The household system is used because we need to be able to administer medications in doses that can be measured with utensils we have on hand (teaspoon, tablespoon, etc.). Most of us have grown up using this household system and are comfortable with the units of weight and volume. However, you should also have knowledge of the other systems.

V. Abbreviations

Abbreviations are a kind of "shorthand" for writing medication orders. They are a quick, convenient way to summarize instructions on what medication to give and how to give it. **It is traditional for doctors to write medication orders in Latin, the language of medicine.** Most of the abbreviations used are shorthand versions of Latin words. For example, stat is derived from "statim" which means "immediately" and p.o. is from "per os" which means "by mouth".

MEASUREMENTS

Calculating medication doses is done by the RN or the Pharmacist only. If there is a difference between the dose ordered and the dose on hand, the RN or Pharmacist must be contacted. They will instruct the non-licensed personnel what to do.

EQUIVALENT MEASUREMENTS YOU WILL NEED TO BE FAMILIAR WITH:

The law prohibits the Medication Attendant from altering any dosages received from the pharmacist; however it is important for you to be able to recognize and understand why the pharmacist may have filled the prescription from the physician with an equivalent.

Liquid Measures

1 ml	=	1 cc
5 ml (=5 cc)	=	1 fluid dram
5 ml (=5 cc)	=	1 tsp
1 tsp	=	1 fluid dram
30 ml (= 30 cc)	=	1 fluid ounce
500 ml (=500 cc)	=	1 pint
1,000 ml (=1,000 cc)	=	1 quart

Weight Measures

15 mg	=	1/4 gr
30 mg	=	1/2 gr
60 mg	=	1 gr

Conversion Chart

1000 ml	=	1 quart	10 mg	=	1/6 grain
30 ml	=	1 fluid ounce	1 mg	=	1/60 grain
4 ml	=	1 fluid dram	2 tbsp.	=	1 fluid ounce
1 ml	=	15 minims	1 tbsp.	=	1/2 fluid ounce
30 gm	=	1 ounce	1 tsp	=	5 cc
15 gm	=	4 drams	30 ml	=	1 fluid ounce
1 gm	=	15 grains	1 cc	=	15 drops
60 mg	=	1 grain			

Half Dose and Double Doses

Most tablets come in 50 mg, 100 mg, or 250 mg weight measurements. Thus if the drug calls for 25, 50, 100, 200, 125, or 500 mg, then you will likely see that pharmacist has filled the prescription with a half a tablet or two tablets. This will depend upon the dose needed and the weight of the normal tablet. The following chart should cover most of the tablet orders you will have.

<u>WEIGHT OR NORMAL TABLET</u>	<u>WEIGHT PRESCRIBED</u>	<u>WHAT YOU WILL ADMINISTER</u>
50 mg	25 mg	1/2 tablet
50 mg	100 mg	2 tablets
100 mg	200 mg	2 tablets
250 mg	125 mg	1/2 tablet
250 mg	500 mg	2 tablets

If you have **any** questions about the amount you are to give, check with the Nurse or Pharmacist.

Medication compressed into **tablets comes in two forms: scored and unscored.**

1. **Scored** tablets have a **line running through the tablet** which allows the tablet to be broken easily in order to make half-tablet doses. These are the only tablets that should be broken in order to give a half dose.



Round Scored Tablet

2. **Unscored** tablets are of two different forms: sugar-coated tablets and enteric-coated tablets. These may not be broken for half doses.



Round Unscored Tablet

- a. **Sugar-coated** tablets are usually smooth and glossy. The sugar coating conceals the bad taste of the drug.



Sugar coated tablet

- b. **Enteric-coated** tablets are treated so they can **pass through the stomach** unchanged and then **disintegrate in the intestine**. This is used because the drug may be irritating to the stomach or because it will be more effective if absorbed in the intestine.



ENTERIC COATED TABLETS MUST NOT BE CRUSHED

VI. Abbreviations Used to Designate Time and Frequency

A. Abbreviations used to specify the **number of times per day**:

1. bid - twice a day
2. tid - three times a day
3. qid - four times a day
4. qd - daily
5. qod - every other day
6. hs - at bedtime
7. ac - before meals
8. pc - after meals
9. qHS - every night at bedtime

B. Abbreviations used to specify the **number of hours between** doses:

1. qh - every hour
2. q2h - every two hours
3. q3h - every three hours
4. q4h - every four hours

C. Abbreviations used for medications ordered **as needed**:

1. **ad. lib.** - as desired
2. **stat** - immediately, now
3. **s.o.s.** - if necessary, one time only
4. **prn** - as needed-usually ordered with a certain time interval

Example: Tylenol 2 tabs q4h prn for pain -- The prn means that the medication is given when the individual needs it. The q4h is a safeguard, meaning that if an individual should need another prn dosage, it should be given **at least** four hours after the first prn dosage.

D. Medication ordered **qd (every day)** should be given at the **same time each day**. Be sure to know the time schedules for daily medication for your agency.

On the following page is a chart of common medical abbreviations used in the practice of medicine. You may see these used in the individual's medical record or on the original prescription written by the physician. It is important to recognize them if it is necessary that you compare medication on hand with an original prescription or written order.

DD FORM 1289 1 NOV 71			
DOD PRESCRIPTION			
FOR (Full name, address, & phone number) (If under 12, give age)			
<u>John R. Doe, HM3, USN</u>			
<u>U.S.S. Neverforgotten (DD 178)</u>			
MEDICAL FACILITY	DATE		
<u>U.S.S. Neverforgotten (DD 178)</u>	<u>23 Jan 99</u>		
<table style="width: 100%;"> <tr> <td style="width: 60%;"> R_x (Superscription) (Inscription) <u>In Belladonna</u> <u>Amphogel qod</u> (Subscription) <u>M & FI Solution</u> (Signa) <u>Sig: 5ml 1:1 a.c.</u> </td> <td style="width: 40%; text-align: center; vertical-align: top;"> gm or ml. 15 ml 120 ml </td> </tr> </table>		R_x (Superscription) (Inscription) <u>In Belladonna</u> <u>Amphogel qod</u> (Subscription) <u>M & FI Solution</u> (Signa) <u>Sig: 5ml 1:1 a.c.</u>	gm or ml. 15 ml 120 ml
R_x (Superscription) (Inscription) <u>In Belladonna</u> <u>Amphogel qod</u> (Subscription) <u>M & FI Solution</u> (Signa) <u>Sig: 5ml 1:1 a.c.</u>	gm or ml. 15 ml 120 ml		
MFG: <u>Wyeth</u>	EXP DATE: <u>12/02</u>		
LOT NO: <u>P39K106</u>	FILLED BY: <u>KMT</u>		
R NUMBER 10072	<u>Jack R. Frost</u> LCDR, MD, USNR SIGNATURE RANK AND DEGREE		
EDITION OF 1 JAN 60 MAY BE USED FOR S/N 0102 LF 012-6201			

SUMMARY OF COMMON ABBREVIATIONS

WORD ELEMENT	REFERS TO OR MEANS	WORD ELEMENT	REFERS TO OR MEANS
aa	of each	OD	right eye
ac	before meals	OS	left eye
ad lib	as desired	os	mouth
bid	twice a day	OU	both eyes
B/P	blood pressure	oz.	ounce
— c	with	pc	after meals
CAP	capsule	per	by means of
cc	cubic centimeter	PM, pm	afternoon, evening
cm	centimeter	p.o., PO, per os	by mouth, orally
c/o	complained of	PRN, prn	when necessary
dr	dram	pt	pint
elix	elixir	q	every
GI	gastrointestinal	qd	every day
g, GM, gm	gram	q3h	every 3 hours
gr	grain	qid	four times a day
gtt, gtts	drop (s)	qod	every other day
h, hr	hour	qt	quart
IM	intramuscular	RBC	red blood cell
IV	intravenous	— s	without
kg, KG	kilogram	SC, subc, sub Q	subcutaneous
L	liter	sig	label
lb	pound	stat	immediately
med, meds	medication (s)	sol	solution
m, min	minim	supp	suppository
mEq, meq	milliequivalent	tab	tablet
mcg	microgram	tbsp., T, Tbs	tablespoon
mg	milligram	tid	three times a day
ml	milliliter	tsp, t	teaspoon
NPO, npo	nothing by mouth	Ung	ointment
od	overdose	WBC	white blood cell

Symbols used to denote quantity or number:

— = ONE HALF i = ONE ii = TWO iii = THREE iv = FOUR v = FIVE

It is recommended to use numerical symbols to denote number of pills to be taken 1, 2, etc.

VI. Factors about Medications that Influence Effectiveness

- A. **Absorption** occurs when medication moves from the site of administration into the bloodstream.
1. The **route** of administration affects absorption.
 - a. Oral medications are absorbed slowest.
 - b. Sublingual is faster than oral.
 - c. Injectable drugs are absorbed faster and more completely than oral.
 - d. Inhaled drugs are absorbed rapidly.
 2. The **form** of an oral medication affects how fast it is absorbed.
 - a. Oral drugs often must be mixed with fluids to be absorbed.
 - b. Liquid medications absorb more rapidly than solids.
 - c. Sustained release tablets and capsules absorb slowly.
 - d. Enteric coated tablets are not absorbed until they reach the intestine.
 3. The **chemical composition** of a medication determines whether it will be absorbed in the stomach or the intestine.
 - a. Acidic medications are absorbed in the stomach (Example: aspirin).
 - b. Alkaline medications are absorbed in the small intestine (Example: quinidine).
 4. **Dosage**
 - a. Usually calculated by body weight.
 - b. Changes in body weight may change the dosage of medication required to produce a desired effect.
 - c. Changes in age may require changes in dosage.
 - d. Changes in kidney function may require changes in dosage.
 - e. Addition or deletions of other medications may require changes in dosages.
 5. The **rate** at which a medication is absorbed may change given the following factors:
 - a. Decreased saliva production
 - b. Decreased gastric juice in the stomach
 - i. Oral medications **usually** absorb faster if the stomach is empty.
 - ii. Absorption may be delayed by food.
 - iii. Food may prevent some medications from being absorbed (Examples: milk with tetracycline medications).
 - c. Decreased movement of the esophagus and stomach muscles.
 - d. One medication may delay or prevent another from being absorbed (Examples: antacids with tetracyclines, antacids with iron products).
 - e. Fluids taken with oral medications increase the rate of absorption.

B. **Metabolism of biotransformation** is the process by which a substance is changed into a form that is more easily excreted by the body. The metabolism of a **drug** or **toxin** in a body is an example of a biotransformation. The body typically deals with a foreign compound by making it more water-soluble, to increase the rate of its excretion through the urine.

1. Most drugs are metabolized by the **liver**.
2. **Kidneys, lungs, and intestines** also help metabolize drugs.
3. Some drugs can be excreted unchanged, but most must be metabolized.
4. Different drugs are metabolized at different rates.
5. If metabolism is decreased, then medication will accumulate in the blood and cells.
6. If metabolism is increased, then more medication will be required to produce the Same effect (tolerance).
7. The age of the individual affects the metabolic rate.
8. Adverse effects will appear mainly in the liver and kidneys.

C. **Medication Elimination**

The effects of a medication cease when the medicine has been eliminated from the body. Medications are eliminated by the lungs, kidneys, intestines, skin or saliva. **However, bear in mind that many medications build up in the body and when the medication is stopped, the effects may continue for several days until it is completely eliminated from the body.**

Excretion is a process by which a drug is eliminated from the body.

1. Most oral and parenteral medications are excreted by the kidneys through the urine.
 - a. Some drugs are excreted in their original form, most are changed by metabolism before excretion.
 - b. All medications excreted by the kidneys are dissolved in the urine relative to the amount of fluid intake.
2. Some oral medications are excreted by the intestines, through the feces.
3. Inhalant medications, such as ether, are excreted by the lungs through breathing.

D. The **amount of physical activity** is thought to affect the rate of drug action.

E. **Chronic illness**, such as diabetes and heart failure, may change the body's response to medication.

- F. **Pain and anxiety** may increase the amount of medication required to bring about a desired effect.
- G. Other **emotional factors** such as worry, fear and sorrow may change the amount of medication required.
- H. **Other chemicals** present in the body may affect the potency of a drug.
Example: alcohol decreases the effect of some antibiotics but increases the effect of tranquilizers, such as Valium ® and Librium ®.

VII. Drug Information

- A. Action of the drug--how the drug provides its therapeutic effect.
- B. Use--what the drug is commonly prescribed for.
- C. Adverse effects--an undesirable side effect of a medication.
- D. Special considerations--listing of useful information including contraindications and precautions. Some suggestions for prevention and treatment are included.
- E. More complete information about a drug may be obtained by consulting one of the many drug resources available. If you have further questions, contact your Pharmacist or staff nurse.

Answer Self-Test Questions - Lesson 2: Basic Pharmacology

LESSON 3: FUNDAMENTALS OF MEDICATION THERAPY

OBJECTIVES

At the completion of this lesson you will be expected to:

1. Describe two common routes of medication administration.
2. Define systemic and local effects.
3. Define desired effects.
4. Define side effects.
5. Discuss causes of medication interaction.
6. Describe how medications are eliminated from the body.
7. Define six different types of effects that may result from a medication.

The familiar saying "no two people are exactly alike" applies well to the effects produced by medications. The same dosage of a medication may produce an intense response in one individual and no observable effects in another; the major reason for these differences is individual variation. Variation occurs as a result of several factors, any of which can influence the body's response to medications.

One of the factors which affects medication action is the **route** of administration. **The most common routes of medication administration are oral (PO) and topical.** Intramuscular, intravenous and subcutaneous routes are generally restricted to hospital use. However, you may come in contact with diabetic individuals who are taking insulin by subcutaneous injection. These injections will be **administered by a nurse or self-administered by the client.**

The **CMA** may perform routine capillary blood glucose monitoring for clients who do not require sliding scale insulin **following appropriate training by the nurse.**

A **CMA** may administer Epinephrine to an individual experiencing anaphylaxis using an **Epi Pen** in order to save their life **following instruction by the nurse.**

A. ROUTES OF MEDICATION ADMINISTRATION

ROUTES OF MEDICATION ADMINISTRATION

ROUTE OF ADMINISTRATION	APPROXIMATE ONSET OF ACTION	INDICATIONS	EXAMPLES
Oral (PO)	30-60 minutes	Whenever possible-- general effects	Most medications, aspirin, sedatives, vitamins, antibiotics
Sublingual	several minutes	When rapid effects are needed/ general effects	Nitroglycerin for chest pain
Rectal	15-30 minutes	When person cannot take oral medication	Analgesics, laxatives suppositories
Topical	within 1 hour	For local effects on skin, and eye, ear	Creams ointments

OTHER ROUTES OF MEDICATIONS CMA'S CANNOT PERFORM:

Subcutaneous (SC)	several minutes	For medications which are activated by the gastrointestinal tract-- general effects	Insulin
Intramuscular (IM)	several minutes	For medications which have poor oral absorption and when rapid effects are desired--general effects	Narcotic analgesic, antibiotics
Intravenous (IV)	within 1 minute	In emergency situations when effects are required	IV fluids, nutrient supplements, antibiotics

Other variations in response will be due to effects of medications. In general, there are two effects to acknowledge:

- **local effects**, which mean the effects of the medication are limited to the site of application as with topical medications, and
- **general or systemic effects**, which mean the effects will be systemic throughout the body.

B. MEDICATION FORMS

Because of the various makeup of the different medications and the many uses some of them have, it is necessary to have different ways to prepare them for use. Listed below are the more common medication forms which you may come in contact with and which also contribute to variation of response among individuals.

ORAL FORMS



Capsules

1. Capsules are small, cylindric gelatin containers that hold a dry powder or liquid Drug.
2. Capsules are a convenient way of administering medications with an unpleasant odor or taste. They are available in various sizes.
3. Capsules can contain several doses of a medication. The doses have special coatings that dissolve at different rates, so that the medicine is released in the body gradually. These **timed-release** capsules allow for medication effects to continue at the same level over a long period of time.

CAUTION: Never crush, open or empty the contents of a **timed release** capsule into food or liquid. Any of these actions could cause all of the medicine to be released at once, and the individual would receive an overdose of medicine.

4. Other words which indicate a drug is "timed-release" are sustained-release or spansule. **EXAMPLE:** Contact spansules.

Tablets

1. Tablets are powdered medications compressed into small disks. Many are easily dissolved. **EXAMPLE:** aspirin
2. Tablets may also have coatings that allow the medication to be **dissolved in the intestines instead of the stomach**. This is known as an **enteric coating**. Like timed-release forms, enteric coated tablets must **not be crushed or mixed into food or liquid**. This would destroy the enteric coating and cause the medicine to be released in the stomach instead of the intestine.
3. Tablets may also be scored (line through center) which allows the tablet to be split if necessary.





Suspensions

1. Suspensions are solid, insoluble particles dispensed in a liquid.
2. All bottles of suspensions must be shaken well before use.
3. Example: Dilantin suspension--an anticonvulsant.



RECTAL/VAGINAL

Suppositories

1. Suppositories are mixtures of medications with a firm base, such as cocoa butter. They are molded into a shape suitable for insertion into a body opening, such as the rectum or the vagina.
2. Suppositories **melt at body temperature**. This allows the medication to come in contact with the mucous membranes of, for example, the rectum or vagina. The medication then produces a local or general effect.
3. Examples: glycerin and Dulcolax ®--medications to move the bowels (should be refrigerated)



TOPICAL

1. **Lotions** are commonly used as **soothing applications** to protect the skin and relieve rashes and itching.
2. Some lotions have a cleansing action, while others have a drying or drawing action.
3. To prevent increased circulation and itching, **lotions should generally be Patted on** the skin instead of rubbed on.
4. All lotions should be **shaken** before using.
5. Example: calamine lotion

GELS

1. Gels are suspensions of insoluble drugs in hydrated form.
Example: Aluminum hydroxide gel (Amphojel)-an antacid

EXTRACTS



1. Extracts are concentrated, solid preparations of drugs obtained by dissolving the crude drug in alcohol or water. The solution is then allowed to evaporate. **Example:** cascara sagrada, used as a laxative.

Lozenges



1. Lozenges are flat disks containing a medicinal agent in a suitable flavored base. The base may be hard sugar candy or the combination of sugar with sufficient mucilage to give it form.
2. Lozenges are placed in the mouth to slowly dissolve, liberating the antiseptic or astringent ingredient.
Example: cough lozenges--given to stop irritation or a dry, tickling cough

Elixirs

1. Elixirs are palatable preparations of drugs made up with alcohol, sugar, and some aromatic or pleasant-smelling substance.

Examples: a. Elixir of terpin hydrate--a cough medicine
 b. Elixir of phenobarbital--a sedative and anticonvulsant

Magma

1. Magma are bulky suspensions, in water, of drugs or preparations that are insoluble. They look like milk or cream. Example: milk of magnesia--a laxative



Syrups

1. Syrups contain medicinal agents dissolved in a sugar and water solution. They are particularly effective for masking the taste of a drug.

Example: cherry syrup

Tinctures

1. Tinctures are diluted alcoholic extracts of drugs. They vary in strength from 10% to 20%. Example: triamcinolone ointment--used for treatment of skin rash.

Creams

1. Creams are solid emulsions containing medicinal agents.
Example: hydrocortisone cream--a corticosteroid applied to rashes caused by an allergic reaction.

C. Effects of Medication

The observable results of changes in the body:

1. A **systemic action** has an effect on the entire body.
2. A **local action** has an effect only the area of the body where the medication has been applied.

Effects from a single medication:

1. Primary or desired effect – therapeutic effect – it is working
2. Secondary effect – (not the main purpose but yields another effect which could be beneficial or harmful)
3. Adverse effect – (harmful or abnormal effect)
4. Allergic effect or hypersensitivity
5. Toxic effect – (causing tissue or organ damage)
6. Cumulative effect (The too Frequent Administration of a drug which is slow of excretion will cause it to accumulate in the system, and sooner or later produce a poisonous effect)
7. Tolerance- (a higher dose is needed to produce the same effect)
8. Idiosyncrasy – (an unusual response to a drug- could be more or less intense)
9. Psychological or emotional dependency.
10. Physical dependency or addiction

EFFECTS OF MEDICATION

The **route** of administration and the **form** of the medication will produce various effects. Most of you, at one time or another, will use some type of medication. When properly prescribed and administered, medications can have several possible outcomes.

The **three primary outcomes** are:

- desired effect
- side effects
- no apparent desired effects.

DESIRED EFFECTS (THERAPEUTIC EFFECTS)

Medications may be prescribed to prevent or cure an illness or reduce the related symptoms. The desired effect is **when the medication is working correctly**. Eliminating a headache by taking aspirin is an example of a desired effect.

SIDE EFFECTS (Unwanted Effects)

Whether or not the desired effect occurs, there is always the possibility that side effects will also occur. Side effects are those produced by the medication other than the desired effects. Side effects are often called unwanted or adverse effects. This module will use the term "side effects." Side effects may be expected and predictable (such as drowsiness when taking a tranquilizer) or unexpected and unpredictable (such as increased activity when taking a tranquilizer). These effects can be minor and relatively harmless (such as urine discoloration from phenytoin) or major and potentially fatal such as a severe reaction to penicillin). Side effects are physical or behavioral changes that may require follow up action. It is important to remember that any change (physical or behavioral) during the first few hours or days following administration of a new medication may have been caused by the medication.

As the direct care giver, you have the most contact with the individual. Therefore, you are the person best able to recognize any changes. **It is your responsibility to observe, report and record** any and all suspected effects of medications.

NO APPARENT DESIRED EFFECTS

All medications have different periods of time in which their full benefit is expected. However, due to unique body differences, there are sometimes no apparent desired effects. The medication has not worked within its usual time period. For example, aspirin is ordered to be administered every 4 hours for a fever. After 24 hours, the fever remains unchanged. Therefore, there has been no desired effect.

The main responsibility in this situation is to record and report the lack of desired effects. The physician may then prescribe an alternate medication or change the dosage of the present medication.

D. INTERACTIONS

Individuals may be receiving more than one medication at a time. Every medication has the potential to interact with another medication. Medication interactions are unwanted effects which are the result of being on more than one medication at a time. Some medications increase the effect of another medication, while other medications decrease the effect. The interactions may be:

- **Synergistic or Potentiation** one medication will increase the effects of another medication.
- **Antagonistic or Against** one medication will decrease the effects of another medication.

There are two important points to remember concerning medication interactions:

1. The more medications an individual takes, the greater the possibility that a medication interaction will occur.
2. By being aware of what medications an individual is taking, the physician can prescribe a new medication that has the least chance of interacting with the medications the individual may already be taking (non-prescription medications will also cause interactions).

In addition to medications interacting, there may also be food and medication interactions. The results of **food/medication** interactions can be the same as medication interactions. Depending on the medications prescribed, some foods may be limited and others suggested. An example would be to avoid foods high in acid when taking antibiotics because antibiotics are destroyed by stomach acid. The reverse of this: increase foods high in acid when taking urinary antiseptics, as these medications work best when the body has a high acid content.

In addition to medication effects previously described, there are additional terms to be familiar with when discussing medication effects.

- **Medication Allergy:** A response which may be immediate and life threatening or delayed and slow to appear.
- **Cumulation:** The body does not eliminate one dose of a drug before another dose is given.
- **Tolerance:** Resistance to the effect of a medication.
- **Addictive Effect:** The physical or emotional dependence on certain medications.

E. Medication Elimination

The effects of a medication cease when the medicine has been eliminated from

the body. Medications are eliminated by the lungs, kidneys, intestines, skin or saliva. However, bear in mind that many medications build up in the body and when the medication is stopped, the effects may continue for several days until it is completely eliminated from the body.

Answer Self-Test Questions - Lesson 3 Fundamentals of Medication Therapy

LESSON 4:

PRINCIPLES AND FUNDAMENTALS OF ADMINISTERING MEDICATIONS

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Describe the correct procedure for disposal of controlled drugs.
2. Describe the proper manner in which medications are to be stored.
3. Describe at least three precautions which help to avoid errors when preparing Medication.
4. Describe the correct procedure to follow when medication is refused.
5. Describe the correct procedure to follow when a medication has been omitted.
6. Describe the term Universal Precautions

PRINCIPLES OF ADMINISTERING MEDICATIONS

Preparing and administering medication requires staff to be diligent at all times. Proper handling and dispensing of medication ensures that the individual is receiving the correct medication. There are specific guidelines that must be followed in the event that a medication is not given at the correct time or a medication needs to be destroyed. It is also important for the residential staff to be aware of the guidelines for controlled substances, storing medications, and maintaining medical asepsis.

I. Medication Dispensing Procedure

- A. The doctor writes an order or co-signs telephone order taken by the staff nurse.
- B. The medication order is then sent to the pharmacist to be filled (follow your agency policy).
- C. The medication is delivered by the pharmacy or picked up at the pharmacy and stored in the designated medication area. The amount may be a single dose, or one to several days' supply:
 1. Individual medication--individual's own container labeled according to the doctor's order.
 2. Unit-dose packaging--**each dose sealed, labeled and dated**

II. Preparing and Administering Medications

A. Medication Administration Record (MAR)

1. Keep in a flip carrier or notebook
2. Used to prepare medication
3. Stored in medication area and used to compare each medication with the order **before** the medication is administered
4. Medications should **always** be checked at least **three (3) times** prior to administration (**RULE OF THREE**).
 - a. compare the medication to the order before removing container from the medicine cabinet.
 - b. compare the medication to the order before you pour it.
 - c. compare the medication to the order before replacing container in the medicine cabinet.
5. Using the **MAR** as a preparation and administration guide which enables the residential staff and the individual to chart immediately.
Charting is to be done immediately following administration

B. Obtain vital signs as indicated or ordered **prior to pouring** and administering certain medications (i.e. digitoxin, propranolol)

C. Keep good notes about medications withheld, refused, and as needed (PRN) medications.

D. Never chart until **after** you have given the medication.

E. Medication Administration Records (MAR) are used to record medication orders. Follow the agency policy and ask the staff nurse for further instruction.

III. General Considerations when Administering Medications

A. Safety precautions that help to avoid errors when preparing medications:

1. Using **aseptic technique** when administering medications helps to reduce the transfer of microorganisms from one person to another. Wash your hands before administering medication. Individuals should wash their hands if they will be handling their own medications.
2. Good lighting should be available when preparing medications.
3. Work alone and avoid distractions and interruptions while preparing medications. Do not leave medications unattended during preparation. If you must leave, place medications in a locked area.
4. Read the label three times. **(RULE OF THREE)**
5. Make sure that the information on the **MAR** corresponds **exactly** to the label on the individual's medication. If it does not-**DO NOT GIVE** the medication. Seek instructions from your nurse. Follow agency policy.
6. Never administer a medicine from an unlabeled or illegibly-labeled container. Never relabel medication yourself. Instead, notify the staff nurse.
7. Medications can be given within one hour of the prescribed time and still be effective.
8. Before giving a medication that is **more than one hour late**, contact your staff nurse for instructions.
9. **Never borrow** medication from one individual to give to another.
10. Check the expiration date. Do not give outdated or discolored drugs.
11. Never return an unused dose of medicine to its container.

B. Safety precautions that prevent errors when administering medications:

1. Address the individual by name.
2. Remain with the individual while he/she swallows the medication. **Do not leave medications for the resident to take later**, unless you are directed to do so by the interdisciplinary team.
3. Always check the medication sheet to make sure the medication has not already been given.
4. Do not allow anyone, including family members or other individuals, to carry or administer medication to another individual.
5. If an individual expresses doubt or concern about a dosage of medication, you must make certain that no mistake has occurred--the individual may be right. **Compare the original physician's order with the label on the medication.** If there is still doubt, check with the staff nurse. Always keep a copy of the **ORIGINAL** physician's order.
6. Observe for any undesirable effects of medications. If you notice any symptoms or hear any complaints that are unusual, check with the staff nurse before administering more medication to the individual.

C. Omitted or Refused Drugs:

1. Omission of a medication should be **reported as soon as it is discovered**. The doctor or staff nurse will determine if the dosage should still be given.
2. Drugs may be omitted for legitimate reasons, such as suspected allergy or NPO for diagnostic tests. Be sure to chart the omission on the individual's chart according to agency policy.
3. When an individual refuses medications:
 - a. **Listen to the reason**; if it is a refusal due to nausea or other possible adverse effect, check with your staff nurse. Always explain to the individual why it is important that he/she take the medication and that it was ordered by his/her physician.
 - b. If the individual still refuses, ask for advice from your staff nurse; it is the individual's right to refuse treatment, including medication, and to receive information about the medical consequences of his/her refusal from the nurse of physician.
4. If a medication is omitted due to refusal, chart the omission on the medication sheet **and** chart the reason for refusal and your notification of the staff nurse
5. Omission of medication for other reasons:
 - a. Reasons for omission might include:
 - i. Inability of individual to swallow medication
 - ii. Physician's order for nothing by mouth (NPO)
 - iii. For cardiotonics, pulse **below 60** unless otherwise ordered by the physician
 - iv. Absence of individual from facility
 - aa. When the individual is away from the facility, medications are sent along with them.
 - bb. Medications are prepared for each scheduled time of administration, packaged, labeled, and sent with the individual.
 - v. Individual has alcohol on his/her breath or appears under the influence. Contact the staff nurse for further instructions.
 - b. Chart an omission on **both the MAR** and incident form and include the reason for omission. Follow agency policy.
 - c. Notify the staff nurse when a medication is omitted.

D. Additional observations:

1. Comments by individual
2. Signs or symptoms observed
3. Consultation with staff nurse
4. Remember to date and sign every entry on the individual's chart

E. Standing Orders

1. Used for **over-the-counter medications**--Example--aspirin, Maalox, cough medications.
2. Must be renewed by the physician annually.
3. Policies regarding standing orders are agency specific. Check With your staff nurse.

IV. Safety Precautions for Controlled Substances

- A. Controlled Substance Act of 1970--established **five schedules** for all controlled substances (drugs that are addictive or habit forming).
- B. Reviewed yearly--substances may be moved from one schedule to another.
- C. Five controlled substances schedules:

1. **Schedule I**--drugs with a high potential for abuse and no currently accepted medical use, such as heroin, marijuana, LSD and research drugs. **Even though marijuana use is legal in some states it remains as a schedule I drug.**
2. **Schedule II**--drugs with a high potential for abuse that have a medical use; every refill requires a new written order from the physician, such as morphine, Demerol® (meperidine), codeine, Tylox®, and Percodan®.
3. **Schedule III**--drugs with moderately high potential for abuse that are often used as medical treatment, such as medications combined with codeine (Tylenol® with codeine), Doriden® (glutethimide) and Butisol® (butabarbital).
4. **Schedule IV**--drugs with little potential for abuse, such as many mild sedatives and anti-anxiety drugs (tranquilizers). For example, Halcion® (triazolam), Valium® (diazepam), Librium® (chlordiazepoxide), phenobarbital, Dalmane® (lurazepam), and Talacen®.
5. **Schedule V**--drugs with a low potential for abuse that still require prescriptions, such as Lomotil® (diphenoxylate).

D. The Controlled Substance Act Requires Special Precautions:

1. Orders for psychotropics and tranquilizers **may not be refilled**. The physician must write a new order.

2. Controlled substances **must be accounted for by the agency.** (Follow agency policy)
3. **Special accountability forms** that are used to record the use of controlled substances are required by agency policy and federal guidelines. The following information must be on the drug record.
 - a. Name of the individual receiving the drug
 - b. Amount of drug used
 - c. Time drug was administered to the individual
 - d. Name of the individual administering the drug and his or her signature
 - e. Name of the doctor who ordered the drug
 - f. The amount remaining after each administration
 - g. Special destruction forms are used when the drug is being destroyed (**DEA Form 41**)
4. The frequency that controlled substances are counted depends on agency policy. Usually psychotropics and tranquilizers and other drugs indicated by the agency are counted during visits by the staff nurse.
5. Wasted or contaminated (dropped) controlled substances must be destroyed by the nurse and pharmacist. The amount destroyed is to be documented by both. Follow agency policy. **Do not flush wasted or contaminated controlled substances.**
6. Follow your agency's policy for disposal of discontinued tranquilizers and/or psychotropics. **NEVER DESTROY THESE MEDS BY YOURSELF**

V. Storage of Medications

A. In a locked cabinet:

1. Each home will have a storage cabinet/file drawer used to store ALL medications.
2. Topical medication or those for instillation (eye or ear) must be stored in separate containers or on a **separate shelf** from orals to avoid contamination and labeled as **EXTERNAL MEDICATIONS**.



B. Some medications **must be refrigerated** in a locked box.

1. Refrigeration prevents medication from spoiling and maintains its consistency.
2. Insulin and other injectable medications are usually kept in a refrigerator.
3. Liquid antibiotics must be refrigerated to maintain their potency.

4. Most suppositories are refrigerated to maintain their potency.
5. Any other medications marked "**Refrigerate**" by the pharmacist must be kept in the refrigerator in a locked box. If it is a scheduled drug it must be kept in a locked box, inside of another locked box

VI. Key Points about Maintaining Medications

- A. Medications are never stored in an area easily accessible to the public.
- B. Medicine cabinets are always locked when not in use.
- C. Labels on medications are kept clean and readable.
 1. If the label is **not readable**, notify the staff nurse, **do not** relabel the medication. A pharmacist must relabel medications.
 2. Never administer a medication from a container that has an unreadable label.
- D. Keep medications securely capped to maintain their potency. Chemical changes can occur when medication is exposed to air.
- E. Many medications are dispensed in dark bottles that prevent their exposure to light.
- F. Do not use outdated medications--before giving medications always check the expiration date on each medication.
- G. Report to the staff nurse any changes in consistency, odor, or color of medication. (Follow agency policy).
 1. If any of these changes are observed, **do not** administer the medication.
 2. Give **any changed medication** to the staff nurse or pharmacist.

VII. Ordering, Receiving, and Disposing of Medications

- A. Ordering medications: Check your agency's policy for guidelines on ordering medications.
- B. Receiving--Medications must be signed for, checked against the list of medications ordered, and put away properly by the assigned medication personnel. **Check agency policy for specific guidelines.**

C. Disposing of medications:

1. If a medication has expired, do not give it to an individual. Inform the staff nurse--**the agency policy will determine how to dispose of it.**
2. **Contaminated** medication (such as **medicine dropped on the floor**) should be destroyed **according to agency policy.** It must also be documented on the individual's medication sheet and signed by two witnesses.
3. Unit-dose medication that has been refused by an individual, but not contaminated or opened, may be returned to the individual's drug supply.
4. **Discontinued** medications should be **removed immediately** from the individual's drug supply and packaged for the staff nurse.
5. When an individual is transferred, the staff nurse will document the name and number of all medications sent with the individual.

VIII. Aseptic (clean) Technique in Medication Maintenance

- A. Cleanliness protects the individual from disease.
- B. Frequent and careful hand washing is the most effective way to avoid spreading organisms that cause disease.
- C. Keep the medication storage area clean.
- D. Clean all equipment after each use.
- E. Wipe the outside of bottles containing liquid with a clean, wet cloth. Do not wipe the rim.
- F. Touch only the outside of medication containers, not the inside.
- G. Universal precautions (see Guidelines for Universal Precautions at the end of this lesson) are to be observed when coming in contact with an individual's body fluids.
- H. Pour medications into appropriate containers, **NOT** into your hand.

IX. Hand Washing Using Medical Asepsis--The single most important step you can take to prevent the spread of infection is proper hand washing.

Handwashing Steps

- A. Turn on the water.
- B. Regulate the water to a comfortable temperature.
- C. Wet your hands.
- D. Apply soap to your hands.
- E. Wash your palms and the backs of your hands.
 - 1. Use at least 10 rotary motions.
 - 2. Use at least 10 friction motions.
 - 3 . If you wear a ring move it frequently washing the ring and finger
- F. Wash your fingers, your thumbs, your knuckles, and between your fingers.
- G Interlace your fingers and rub them up and down at least 10 times.
- H. Wash underneath your fingernails.
- I. Point your hands down toward the drain and rinse them thoroughly under the running water.
- J. Wet your wrists and forearms.
- K. Apply soap to your wrists and forearms.
- L. Wash your wrists and forearms.
 - 1. Use at least 10 rotary motions.
 - 2. Use at least 10 friction motions.
- M. Point your arms down toward the drain and rinse thoroughly, beginning at your elbows and ending at your fingertips.
- N. Blot your hands and arms dry.
 - 1. Begin at your forearm and blot down to your fingertips.
 - 2. Use clean paper towels.
- O. Turn off the water without breaking asepsis (use a clean paper towel to turn off the faucets).

X. Guidelines for Universal Precautions (See following pages)

Recommended Guidelines for Universal Precautions

The mission of the Occupational Health and Safety Administration (OSHA) is to save lives, prevent injuries, and protect the health of America's workers. As part of the Department of Labor, OSHA promotes worker safety and health in every workplace in the United States. OSHA'S **Bloodborne pathogens standard** protects employees who work in occupations where they are at risk of exposure to blood or other potentially infectious materials (OPIM).

In order to reduce or eliminate the hazards of occupational exposure to Bloodborne pathogens, an employer must implement an exposure control plan for the worksite with details on employee protection measures. The plan must also describe how an employer will use engineering and work practice controls, personal protective clothing and equipment, employee training, medical surveillance, hepatitis B vaccinations, and other provisions as required by OSHA's Bloodborne Pathogens Standard ([29 CFR 1910.1030](#)). Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

Bloodborne pathogens are infectious microorganisms in human blood and certain other body fluids that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needle sticks and other sharps-related injuries may expose workers to Bloodborne pathogens. Infected body fluids splashed into eyes, nose, mouth or through open areas of the skin will also expose workers.

These guidelines are designed to assist facilities and individuals in the use of universal precautions that are necessary to prevent the spread of HIV, HBV, HCV infection and other dangerous communicable diseases.

OVERVIEW

Exposures to blood and other body fluids occur across a wide variety of occupations. Health care workers, emergency response and public safety personnel, and other workers can be exposed to blood through needle stick and other sharps injuries, mucous membrane, and skin exposures. The pathogens of primary concern are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). Workers and employers are urged to take advantage of available engineering controls and work practices to prevent exposure to blood and other body fluids.

Universal precautions refers to the practice, in medicine, of avoiding contact with patients' bodily fluids, by means of the wearing of nonporous articles such as medical gloves, goggles, and face shields. The practice was introduced in 1985–88. In 1987, the practice of universal precautions was adjusted by a set of rules known as body substance isolation. In 1996, both practices were replaced by the latest approach known as **standard precautions**. Use of personal protective equipment is now recommended in all health settings.

In December 1991, the U.S. Occupational Safety and Health Administration (OSHA) promulgated its *Occupational Exposure to Bloodborne Pathogens Standard*, incorporating universal precautions and imposing detailed requirements on employers of health care workers, including engineering controls, provision of protective barrier devices,

standardized labeling of biohazards, mandatory training of employees in the Universal Precautions, management of accidental parenteral exposure incidents, and availability to employees of immunization against hepatitis B virus.

The following is a Quick Reference Guide to the Bloodborne Pathogens Standard

1. What is the Bloodborne Pathogens standard?

OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) as amended pursuant to the *Needlestick Safety and Prevention Act* of 2000, prescribes safeguards to protect workers against the health hazards caused by Bloodborne pathogens. Its requirements address items such as exposure control plans, universal precautions, engineering and work practice controls, personal protective equipment, housekeeping, laboratories, hepatitis B vaccination, post-exposure follow-up, hazard communication and training, and recordkeeping. The standard places requirements on employers whose workers can be reasonably anticipated to contact blood or other potentially infectious materials (OPIM), such as unfixed human tissues and certain body fluids.

2. What is the Needlestick Safety and Prevention Act?

The *Needlestick Safety and Prevention Act* (the Act) (Pub. L. 106-430) was signed into law on November 6, 2000. Because occupational exposure to Bloodborne pathogens from accidental sharps injuries in healthcare and other occupational settings continues to be a serious problem, Congress required modification of OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) to set forth in greater detail (and make more specific) OSHA's requirement for employers to identify, evaluate and implement safer medical devices such as needleless systems and sharps with engineered sharps protections. The Act also mandated additional requirements for maintaining a sharps injury log and for the involvement of non-managerial healthcare workers in identifying, evaluating and choosing effective engineering and work practice controls. These are workers who are responsible for direct patient care and be potentially exposed to injuries from contaminated sharps.

3. How does the Needlestick Safety and Prevention Act apply to OSHA's Bloodborne Pathogens standard?

The Act directed OSHA to revise its Bloodborne Pathogens standard (29 CFR 1910.1030). OSHA published the revised standard in the *Federal Register* on January 18, 2001; it took effect on April 18, 2001. The requirement to implement the use of engineering controls, which includes safer medical devices, has been in effect since 1992.

This overview is intended to be consistent with guidelines published as a Joint Advisory Notice of the Department of Labor and Department of Health and Human Services (Federal Register Vol. 52, No 210, Oct. 30, 1987), proposed rules of the Department of Labor (29 CFR Part 1910, Nov. 27, 1987), and guidance from the Centers for Disease Control (CDC) (MMWR Vol. 36, Aug. 21, 1987) and MMWR, Vol. 37, June 24, 1988). It is not the intent of these guidelines to mandate protection from all possible or theoretic exposures to blood or visibly blood contaminated body fluids. Rather, the intent is to provide guidelines for protection from predictable exposure to blood or visibly blood contaminated body fluids, regardless of known or suspected HIV serologic status. These

guidelines represent **minimum precautions** and employers are free to utilize more stringent policies for the protection of their workers.

The human immunodeficient virus (HIV), the causative agent of AIDS, is transmitted through direct contact with blood, through sexual intercourse or perinatally from an infected pregnant woman to the baby she is carrying. Blood, semen, vaginal secretions, and possibly breast milk are the only body fluids known to transmit HIV. Universal precautions also apply to tissues and to the following fluids: cerebrospinal fluid (CSF), synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. The risk of transmission of HIV and HBV from these fluids is unknown, epidemiologic studies in the health-care and community setting are currently inadequate to assess the potential risk to health-care workers from occupational exposures to them. However, HIV has been isolated from CSF, synovial, and amniotic fluid (6-8), and HB_sAG has been detected in synovial fluid, amniotic fluid, and peritoneal fluid. One case of HIV transmission was reported after a percutaneous exposure to bloody pleural fluid obtained by needle aspiration. Whereas aseptic procedures used to obtain these fluids for diagnostic or therapeutic purposes protect health-care workers from skin exposures, they cannot prevent penetrating injuries due to contaminated needles or other sharp instruments.

Employees **must** protect themselves from direct exposure to blood or body fluids that are visibly contaminated with blood to prevent diseases, such as hepatitis, that are transmitted by body fluids such as saliva, urine or feces, regardless of contamination with blood. For this reason, it is strongly recommended that precautions be taken to prevent direct contact **with all body fluids of all persons**, whether or not the body fluids are visibly contaminated with blood.

1. Sterile gloves shall be worn for procedures involving contact with **normally sterile** areas of the body.
2. Use examination gloves for procedures involving contact with mucous membrane, unless otherwise indicated and for other patient care or diagnostic procedures that do not require the use of sterile gloves.
 - Examination gloves should be worn at least in situations where direct contact with blood or body fluids that are visibly contaminated with blood is likely. Examples of such situations include but are not limited to: invasive or surgical procedures; performing oral hygiene; providing wound or decubitus care; cleaning up blood contaminated vomitus, urine, or feces; and handling items or surfaces soiled with blood or blood contaminated body fluids.
 - Examination gloves are not necessary for contact with intact skin or for handling unsoiled objects previously in contact with or handled by others.
3. Examination gloves shall be removed and discarded after contact with each patient, fluid, item or surface. Hands should be washed immediately after gloves are removed. A new set of gloves should be used for contact with each person. Gloves should never be washed or wiped with any substance as this damages their integrity and increases permeability.

4. Experienced professional phlebotomists who are judged by their employer to have excellent technique may be permitted by the employer to use their judgment as to whether gloves are necessary or not on an individual basis.
 - **However, employees with permission** not to wear gloves shall be permitted to wear gloves at their discretion. Employers cannot deny any employee the right to protective equipment.
 - **The employer shall document this permission** for individual employees to be exempt from wearing gloves. Any change, e.g., withdrawal of permission, shall also be documented.
 - Even if an employee has permission not to wear gloves, gloves must be worn if hands are chapped, scratched, or with non-intact skin. Also, if infection control measures requiring gloves and other protective equipment are in effect for a specific patient, these infection control measures supersede any general exclusion allowed to phlebotomists under these guidelines. For example, if a physician has ordered a patient to be in "strict isolation", this order prevails and all health care providers, including phlebotomists, should comply with the physician's order.
 - Gloves must be readily available at all times. Hands shall be washed in between each individual whether gloves are worn or not.
5. Use general-purpose utility gloves (e.g., rubber household gloves) for housekeeping chores involving potential blood contact and for instrument cleaning and decontamination procedures. Utility gloves may be decontaminated and reused but should be discarded if they are peeling, or cracked or discolored, or if they have punctures, tears, or other evidence of deterioration.
6. Eye protectors (goggles, glasses or shields) and face masks shall be worn for all tasks or procedures that are likely to generate sprays or splashes of blood/body fluids.
7. Impervious gowns or aprons shall be worn during all tasks or procedures that are likely to generate sprays or splashes of blood/body fluids.
8. Needles and other sharp objects shall be placed in a puncture resistant container immediately after use. Needles shall not be recapped, bent, or broken prior to disposal.
9. Health care workers with weeping exudative lesions or dermatitis, which cannot be securely covered, shall refrain both from direct patient care and from handling clean or soiled patient equipment.

10. Persons whose tasks include participation in cardiopulmonary resuscitation (CPR) should use a one-way mask when performing mouth-to-mouth resuscitation.
11. Linen, clothing or other materials that are visibly contaminated with blood or body fluids shall be placed in bags or containers that impervious to moisture before transport for cleaning. Gloves should be worn while bagging these materials.
12. Blood and other visibly blood contaminated specimens of body fluids or tissues shall be handled in accordance with infectious waste rules adopted by your facility.
13. An abuse of these guidelines should be reported to your supervisor or infection control chairperson.

DEFINITIONS and EXPLANATORY NOTES CONCERNING UNIVERSAL PRECAUTIONS

1. **Universal precautions** refer to the use of barrier precautions by employees to prevent direct skin or mucous membrane contact with blood or other body fluids that are visibly contaminated with blood. These precautions should be applied to blood and body fluids of ALL persons. The purpose of universal precautions is to protect individuals from HIV infection and other communicable diseases.
2. **Barrier** precautions, also known as protective equipment, include gloves, masks, gowns, glasses, goggles and face shields.
3. **HIV** - human immunodeficiency virus, the causative agent of the acquired immuno-deficiency syndrome (AIDS). This virus has been isolated on at least one occasion from blood, semen, vaginal secretions, breast milk, saliva, tears, spinal fluid, amniotic fluid and urine. Blood, semen, vaginal secretions and possibly breast milk are the only fluids implicated in transmission of HIV. No cases of HIV infection have been reported from exposure to tears, saliva, urine or feces. However, other potentially dangerous communicable diseases may be transmitted by these bodily fluids in the absence of blood contamination and avoidance is recommended. Previous names of HIV include Human T-Lymphotropic Virus Type III (HTLV-III) and Lymphadenopathy-Associated Virus (LAV).
4. **HIV seropositive** refers to the medical condition of a person having positive serologic (blood) tests for antibodies to the HIV. To be considered seropositive, a person must test positive repeatedly and test positive by two different methods of testing. Currently the enzyme linked immunosorbent assay (ELISA) is the recommended screening test and the Western Blot assay is the recommended confirmatory test.

5. **Body fluids** are any secretions or emissions from the human body. Body fluids included but are not limited to semen; saliva; tears; vomitus; urine; feces; breast milk; wound drainage; spinal and amniotic fluids; vaginal secretions; menses and mucus.
6. **Blood** is composed of both cellular and fluid components. Blood includes white and red blood cells, serum, plasma and other untreated blood products.
7. **Exposure** is defined as direct contact of blood or body fluids of one person with the skin or mucous membranes of another person.

NOTE: Scientific evidence indicates that only direct contact with semen, vaginal secretions, blood, or visibly blood contaminated body fluids carries a potential risk for HIV transmission. Moreover, only direct contact with blood has been implicated in occupational acquisition of HIV infection.

READING MATERIALS

Centers for Disease Control

- 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings(<http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>) Page 66 of this Guideline from the Healthcare Infection Control Practices Advisory Committee (HICPAC) describes Standard Precautions.
- Recommendations for Preventing Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures(<http://www.cdc.gov/mmwr/preview/mmwrhtml/00014845.htm>) *MMWR, July 12, 1991/40 (RR08)*
Updates recommendations for prevention of transmission of human immunodeficiency virus (HIV) and hepatitis B virus (HBV) in the health care setting

Answer Self-Test Questions

Lesson 4 Principles & Fundamentals of Administering Medications

LESSON 5: THE MEDICATION CYCLE

OBJECTIVES

At the completion of this lesson, you will be expected to:

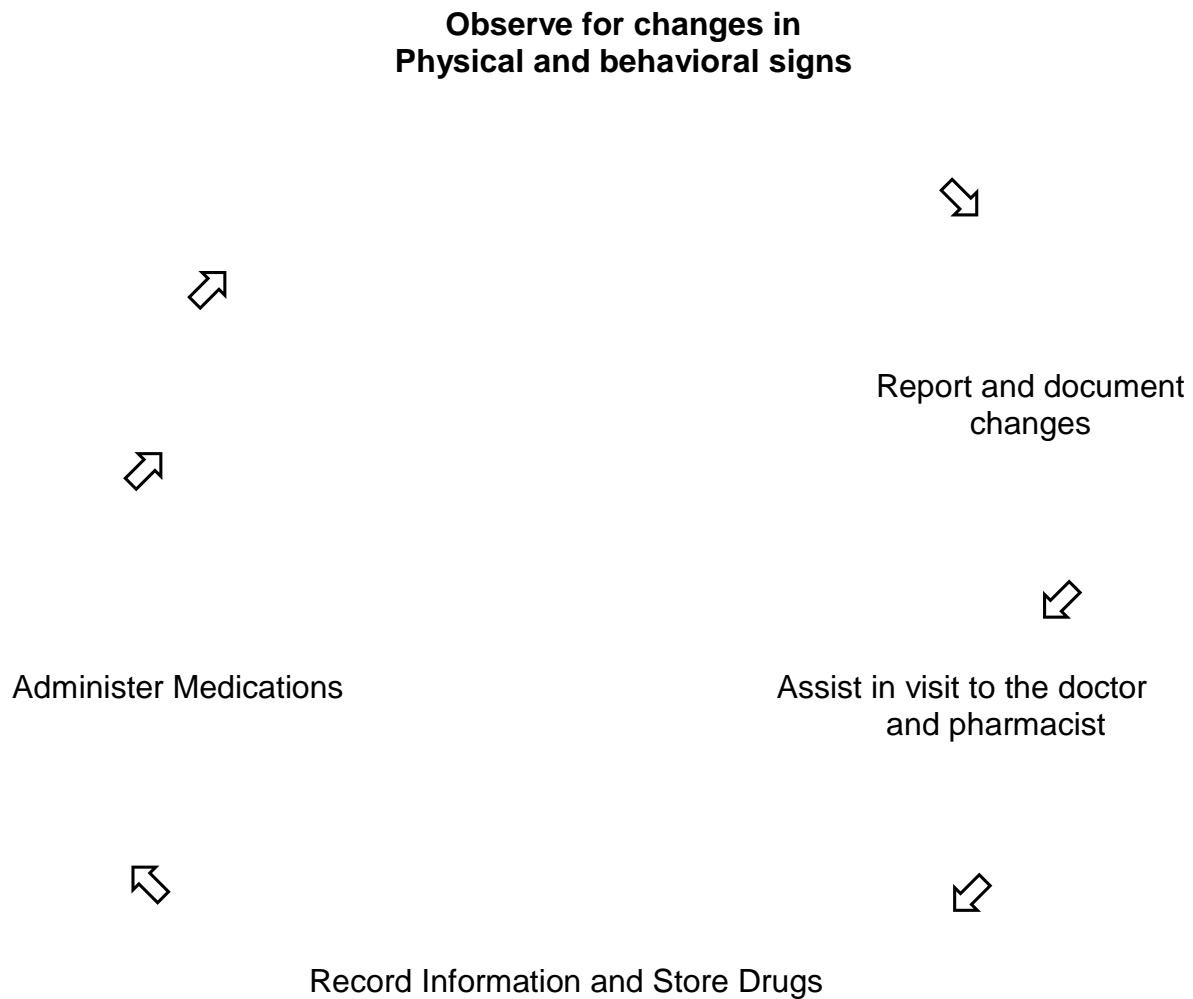
1. List the types of information which must accompany an individual when visiting a physician.
2. Discuss three (3) ways to encourage individuals to represent themselves when visiting a physician.
3. List the questions which must be asked of the physician and/or pharmacist when a new medication is prescribed.
4. Define the purpose of a prescription.
5. Relate how to verify if you have received the right medication from the pharmacy.
6. List the information transcribed by a pharmacist to the medication label.
7. Record procedure to follow for "out of residence" medication administration.
8. Define the difference between unit dose and medication in a bulk container.

MEDICATION CYCLE

Not long ago, only doctors and nurses were allowed to administer medications, but times are changing: many others in human services are now also asked to give medications. They are also **expected to observe for changes** which may necessitate taking the individual to see a physician, obtaining the prescribed medication, following directions for storage and recording, and administering the medication. However, responsibilities do not end at this point, for **you will now be observing for changes which may be due to the medications. It is important to have knowledge of the medications that you are administering in order to know if they are effective or perhaps causing a potentially serious side effect.**

MEDICATION CYCLE

The following medication cycle has been designed to guide you through six steps of medication administration.



The cycle is continuous: we start with Step 1 and go through the various steps and eventually return to Step 1. Using the cycle as a guide, you will now start with the first step.

A. OBSERVING FOR PHYSICAL AND BEHAVIORAL PROBLEMS AND/OR CHANGES

THE FIRST STEP IN THE MEDICATION CYCLE

Think back to problems or symptoms which may have prompted you to see a doctor. Possibly some of the symptoms you are thinking of include: loss of appetite, pain, fatigue, rash, and general discomfort. These symptoms may be due to physical and behavioral changes and are the same types of symptoms you may observe in individuals. Because you are the person in closest contact with the individual, your observations and descriptions of these symptoms are very important. Very often the physician will rely on your report, in addition to the individual's description of the problem.

Observing and reporting physical and behavioral changes in individuals is an important responsibility for direct care staff. You have the responsibility for the care of the individual 24 hours a day. Therefore, you are in the best position to notice any changes--physical and behavioral.

TYPES OF CHANGES

- **Objective Symptoms:** Change which can be clearly seen, heard, felt (e.g., cough, loss of weight, loss of appetite, vomiting, diarrhea, flushing or reddening of skin, rash, etc.)
- **Subjective Symptoms:** Change which is only perceptible to the individual (e.g., itching of the skin, tenderness or pain). You will have to ask questions about how the person feels.

Objective symptoms (SIGNS) are easily observed. However, in order to acknowledge subjective symptoms, you will have to ask the individual specific questions and observe his/her behavior which is inferred through "body language" (e.g., shaking head, gestures, hand movements, facial expressions, body position, expressing interest and disinterest).

It is clear that medications can be used to treat a variety of **physical** problems. However, there are many instances where other methods can be utilized to alleviate a physical symptom. For example: an individual says he/she has a headache. Before resorting to medications, consider these questions: Is the individual constipated? Does she/he have a fever? Is the individual saying she/he has a headache because she/he wants your attention? Exploring some of the possible reasons for a physical change will help in your explanation to the doctor when you seek direction.

- **Behavioral Changes:** The use of medications as a treatment procedure to influence behavior problems has increased dramatically. Prior to the discovery of tranquilizers, behavior problems were treated with sedatives and electric shock therapy.

Strait jackets and padded cells were used for violent individuals, and last but not least, pre-frontal lobotomies were performed. Tranquilizers are classified as psychotropic medications, drugs that are "mind altering." They affect behavior, emotions, and/or intellectual processes. Although psychotropics are useful, they should be used only when all other alternative treatments have been tried and have been unsuccessful.

Observations to Chart: Report changes from normal to Staff Nurse



1. Vital Signs

- A. Temperature--chart the following: (Normal temp is 98.6)
 1. Actual thermometer reading
 2. Areas of the body used for measuring the temperature
 3. Example: 98.6 axillary (AX), 98.6 rectal (R), and 98.6 oral (O)
- B. Respirations--chart the following: Normal adult range 12 to 16
 1. Rate of respiration per minute
 2. Difficulty breathing (dyspnea)
 3. Difficulty breathing unless sitting (orthopnea)
 4. Periods of not breathing (apnea)
- C. Pulse--chart the following: The normal pulse for adults ranges from 60 to 100 beats per minute
 1. Rate per minute
 2. Rhythm (regular or irregular)
 3. The quality (strong, weak and thread)
- D. Blood pressure--chart the following:
 1. Systolic/diastolic reading
 2. Position of individual when blood pressure is taken
 3. Limb from which blood pressure was taken
 4. Example: BP 120/90 right arm – sitting

According to the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health, high blood pressure for adults is defined as: 140/90.

In an update of NHLBI guidelines for hypertension in 2003, a new blood pressure category was added called prehypertension: 120/80 to 139/ 89

The NHLBI guidelines now define normal blood pressure as follows: Less than 120/80

2. General appearance and condition



A. **Skin color**--chart the following:

1. Pallor (pale)
2. Flushing (redness)
3. Cyanosis (blue)
4. Jaundice (yellow- can be seen in the eye as well as the skin)

B. **Skin condition**--chart the following:

1. Turgor
2. Bedsores (decubiti)
3. Edema
4. Rashes/itching
5. Lacerations
6. Bruises
7. Burns
8. Inflammation/redness
9. Dryness/wetness
10. Example: 3cm x 5cm x 1cm (length, width, depth) area of coccyx.
Redness decreases when individual turned on side.

C. **Weakness**--chart the following:

1. Loss of strength
2. General or localized
3. Example: Unequal hand grips. Right hand stronger than left.

D. **Eating habits**--chart the following:

1. Amount of food eaten
2. Any difficulty in swallowing
3. Difficulty in feeding self
4. Food preferences

5. Example: Individual prefers soft food. Lunch: ate 1/2 meat, all vegetables, ½ dessert, drank all liquids.

E. **Sleep**--chart the following:

1. Ability to sleep at night
2. Severe drowsiness during the day
3. Statements made by the individual about sleep habits
4. Example: Individual stated difficulty sleeping last night due to another Individual being noisy.

F. **Weight**--chart the following:

1. Accurate weight (labeled in lbs. or kilos)
2. Report variance of three (3) or more pounds to staff nurse.
3. Any persistent increase or decrease unrelated to dietary changes.

3. **Gastrointestinal Tract**

A. Nausea, vomiting (emesis)--chart the following:

1. Color
2. Frequency
3. Amount of vomitus
4. Consistency
5. Times of nausea
6. Example: Emesis of 100 cc green, thick liquid, 3:00 a.m.

B. Abdominal distention--chart the following:

1. Variation in size of abdomen
2. Whether the abdomen is soft, hard, or painful
3. Example: Abdomen appears more distended, but remains soft.

C. Bowel movement (feces)--chart the following:

1. Amount
2. Frequency
3. Consistency
4. Color
5. Example: Individual expelled 100 cc tarry, liquid stool.

D. Mouth and gums – chart the following:

1. Bleeding
2. Soreness
3. Lesions or sores
4. Ill-fitting dentures
5. Example: Individual c/o soreness on right upper gum. States “dentures need to be adjusted.”

4. **Respiratory Tract**

A. Respirations (see vital signs):

B. Cough--chart the following:

1. Productive or non-productive
2. Any difficulty in breathing
3. Breath odor--foul, sweet, fruity, alcohol
4. Example: Individual has productive cough of thick, yellow sputum.
There is an odor of alcohol on breath.

5. **Genitourinary Tract**

A. Urine (voiding)--chart the following:

1. Amount
2. Color--redness, deep brown, pale yellow, dark yellow, amber
3. Pain
4. Difficulty in voiding
5. Frequency
6. Example: Individual voiding 50 cc concentrated urine every 30 minutes.
Slight pain upon urination.

B. Discharge--chart the following:

1. Color of any discharge from vagina, urethra, penis, or rectum
2. Consistency of any discharge from vagina, urethra, penis, or rectum
3. Example: Thin, watery, clear discharge from vagina.

6. **Musculoskeletal System--chart the following:**

A. Physical activity

1. Movements of limbs
2. Ability to walk
3. Involuntary movements
4. Tremors
5. Contractions
6. Pain, swelling
7. Exercises, including Range of Motion (ROM)
8. Example: ROM to all extremities for 5 minutes.

7. **Mental and Emotional State**

A. State of consciousness--chart the following:

1. Alert
2. Lethargic
3. Comatose
4. Responsive
5. Example: Individual arouses only to painful stimuli (sternal rub).

B. Emotional status--chart the following **by describing what the individual is doing** which **causes you to think** that the individual is:

1. Apprehensive
2. Fearful
3. Nervous
4. Distressed
5. Withdrawn
6. Happy
7. Friendly
8. Sad
9. Depressed
10. Apathetic
11. Example: Individual is pacing up and down the hall, wringing his hands, and talking to self for 30 minutes.

8. **Nervous System**--chart the following:

- A. Changes in sensation or movement
- B. Changes in speech--slurring, drooling, tremors of the tongue
- C. Period of vertigo, aphasia, syncope
- D. Convulsions
 1. Time convulsion occurred
 2. Part of the body affected
 3. Type
 4. Duration
 5. INJURY (IF ANY OCCURRED)
 6. Example: 15 second syncopal episode after being outdoors (T.99) for 30 minutes BP 80/60, P. 120, R. 30.

9. **Pain** – chart the following:

- A. Time
- B. Area
- C. Type
 1. Mild
 2. Steady
 3. Intermittent
 4. Sharp
 5. Dull
 6. Throbbing
 7. Sudden onset
 8. Gradual onset
 9. Severity

D. Individual's statement regarding pain.

E. Example: Individual complaining of headache. Aspirin given, No relief in an hour.

10. **Eyes**

A. Changes in vision--chart individual's statements about vision:

1. Blurred.
2. Double
3. Decreased
4. Change in pupil size
5. Sensitivity to light
6. Visual halo
7. Inability to see
8. Color of sclera
9. Recurrent headaches
10. Example: Individual c/o double vision in right eye. Staff nurse notified.

B. Physical signs.

1. Drainage
2. Itching

11. **Ears**

A. Changes in hearing--chart the following statements by the individual:

1. Decreased Hearing
2. Presence of ringing in ear(s)
3. Pain or pressure
4. Example: Individual c/o ringing in right ear.

B. Physical signs:

1. Drainage
2. Itching

Answer Self-Test Questions - Lesson 5: The Medication Cycle -- A. Observing for Physical and Behavior Problems and/or Changes.

B. REPORTING AND RECORDING PHYSICAL AND BEHAVIORAL PROBLEMS AND/OR CHANGES

THE SECOND STEP IN THE MEDICATION CYCLE

In addition to observing physical and behavioral problems and/or changes, you must know what to report, to whom to report and how to report. Agencies usually have specific policy and procedures to follow for reporting and recording observations. However, the following information is basic to most agencies.

EMERGENCY MEDICAL CONDITIONS

What to Report

There is no single rule to follow in determining what constitutes an emergency condition. It may stem from an illness or accident, resulting in a severe injury (life threatening).

Some Common Emergency Conditions:

- excessive bleeding which you are unable to control
- broken bones
- choking, not breathing, failure of respiratory system
- no heartbeat, failure of circulatory system
- behavior which poses a threat to individual, or other individuals or staff safety
- loss of consciousness not related to seizure, and
- prolonged seizure activity

When to Report

Immediately to the supervisor.

How to Report

Most agencies will have an emergency number posted by the telephone. This number will facilitate getting an ambulance. Some helpful suggestions

If more than one person is available:

- one person makes call
- one person stays with individual and administers first aid, if applicable
- collect individual's medical record so that complete information can be given to the treating physician (records are not to be left with the physician)
- accompany individual to hospital with medical records

In case of emergency: Make sure you have posted in your residence the name and telephone number of the following:

- Administrative supervisor
- Ambulance
- Individual's physician

Any error involving medication shall be reported immediately to the appropriate agency personnel (according to agency policy).

If you are alone, your primary responsibility is the welfare of the individual.

GET HELP BUT STAY WITH THE INDIVIDUAL UNTIL HELP ARRIVES

After the Emergency

As soon as possible, inform the person on call and the individual's physician. Follow these calls with a written report in the individual's record according to agency policies.

NON-EMERGENCY MEDICAL CONDITIONS

What to Report

Potentially, health threatening conditions are those physical or behavioral signs which lead you to believe that the health or safety of the individual or others is endangered. This is a very broad definition. You know your individuals better than anyone; you know what their normal behavior patterns and physical signs are like; you have to make an interested, caring judgment as to when a health threatening condition exists.

Common sense is important here. Think of those situations (if they occurred at home) which would lead you to call a doctor, but not an ambulance. Examples:

- A fever which is not reduced by normal procedures, such as aspirin
- Repeated episodes of angry aggressive behavior which, while controllable, are not typical of the person
- Diarrhea which is not affected by prescribed medication
- A rash which lasts for several days or seems to be getting worse
- An increase in seizure activity
- Cold symptoms which last longer than a week
- Severe seizure for an individual who has a history of mild seizures
- Unusually withdrawn behavior on the part of a person who ordinarily has frequent interactions with other
- Unexplained black and blue marks
- Lack of balance or coordination

When to Report

As soon as possible after the situation is observed

To Whom and How to Report

Whenever a health threatening condition arises, notify your supervisory person on call. Report your observations and reasons why you feel this is a health threatening situation. Your supervisor will then determine whether or not the individual should be seen by a physician.

- **Follow up your phone call with a written documentation as soon as possible.**
- **Continue to observe individual for any further changes.**

OTHER HEALTH RELATED CHANGES

What to Report

Any physical or behavioral changes other than those covered before are included in this category. Any significant physical or behavioral changes could be important. They must be recorded in the client's record in order that they may be used in machine decisions regarding medications, dosages, and treatment plans. Report as soon as possible after the condition is observed.

- Examples:
- a. changes in sleep patterns
 - b. changes in bowel habits

To Whom and How to Report

Write a description of occurrence in the client's record and notify your supervisor.

When in Doubt

If you are **not certain** if a situation is an emergency or non-emergency--**treat it as an emergency**. If you are wrong no harm will have been done.

Answer Self-Test Questions - Lesson 5: The Medication Cycle--B. Reporting and Recording Physical and/or Behavioral Changes.

C. ASSISTING IN VISIT TO THE PHYSICIAN AND PHARMACIST THIRD AND FOURTH STEPS IN THE MEDICATION CYCLE

ASSISTING IN VISIT TO THE PHYSICIAN

In previous sections you learned the types of behavioral and physical problems and/or changes to observe in individuals. You also studied how and when you should report any changes which you observed. In this section, you will be guided through the process of assisting the individual in a visit to the physician.

When you assist an individual in visiting the physician, there are three things which you should be aware of: you need to take specific individual information to the physician, there is certain information you should obtain from the physician, and there are certain things you need to do with the information obtained from the physician.

INFORMATION FOR THE PHYSICIAN

In order to prescribe the best medication and treatment that will offer the maximum help and minimum potential danger, the physician must have certain information.

- **Give observations not opinions or diagnoses**

Most agencies make a practice of keeping the above information in a single place or file. However, agency policies differ. You should know the forms used and the location of the records needed to provide all the above information to the physician. However, such records cannot be left with the physician.

ENCOURAGING INDIVIDUAL PARTICIPATION WHEN VISITING PHYSICIAN

Individuals will differ greatly in their ability to represent themselves when seeing a doctor. Some persons will need your help only to gather the necessary documents and will then be able to go to the physician and pharmacist by themselves. Others will need more assistance, and a few individuals will depend almost entirely on your help.

In all cases, **encourage the individual to participate** as much as possible. Don't "speak for the individual" unless it is necessary. Look at the following examples, for the "wrong" and "right" way to assist the individual.

1. Encourage the individual to provide his or her own description first and you fill in later.
2. Always allow the individual to answer first. If necessary, redirect the physician's questions to the individual.

3. Encourage the individual to ask all the questions he/she can remember and then you ask the rest.
4. Have the physician give the individual the prescription then provide assistance, if necessary, to have it filled.

The main point is for your actions to provide an appropriate model for others. Many people will assume that the individual is totally dependent and has little to offer in this process. Your behavior can counteract this attitude and should serve to reinforce a positive image of the individual.

INFORMATION TO OBTAIN FROM THE PHYSICIAN AND/OR PHARMACIST

When a physician prescribes a new medication for an individual, you must be sure to get certain information. This information will be helpful for anyone who will be administering the medication.

In addition to the prescription, there are important questions you should have answered:

- a. **What is the purpose and desired effect of the medication?**
What is the diagnosis or condition for which the medication has been prescribed? What signs will tell you the medication is effective?
- b. **What is the response time?**
How much time should it take before the desired effects can be expected to occur? When should we see some improvement?
- c. **Are there any side effects that should be especially watched for?**
Given the personal characteristics of a specific individual and/or the properties of a given medication, there may be certain potential side effects.
- d. **Are there any possible interactions with other medications and/or foods?**
Food and/or medication interactions are a major cause of side effects. The physician's knowledge of the individual's current medications and diet will allow him or her to predict whether interactions may occur.
- e. **Are there any special administration or storage instructions?**
Cover such areas as special storage instructions or diet restrictions while taking this medication. Also specific time(s) to take medication.

MEDICATION CONTAINER

The pharmacist will fill the prescription and transcribe the information from the prescription to the drug label. When you and the individual are given the container, read the label to make sure you understand the directions. The following medication label has been adapted from the previous prescription for Clara Barton (see below).

MEDICATION LABEL

PHONE	Cozens Pharmacy
473-5480	80 Delaware Avenue
	Albany, NY 12208

Clara Barton	10/20/2016
phenytoin	
substitute for: Dilantin 100 mg.	#90
Take one (1) capsule three times a day	

Rx 113	Dr. J. Dibble
Refills remaining <u>2</u>	Expiration date 2/14/17

Dr. J. Dibble Substitution Permitted

It is important that you fully understand the directions on the label for this information must be transcribed to a medication administration record when you return to the residence.

NOTE: The physician signed the prescription on the line substitution permissible. Therefore, the pharmacist substituted phenytoin for the trade name Dilantin.

UNIT DOSE

Sometimes the medication you receive from the pharmacist will not be a traditional bottle type container. Unit dose packaging is an alternative that is being used more and more frequently.

A unit dose package system contains the ordered amount of medicine for a single unit dose, individually wrapped. Each individual dose will be labeled with the drug's brand and generic name, strength of dose contained, expiration date (if appropriate) and recommendations for special storing if necessary. The number of doses the doctor orders will be given to you in a container which is labeled with the prescription information. Tablets, capsules, and liquids can all be prepared in a single unit dose package. The unit dose package system is very convenient but more expensive than the traditional method of packaging and more room is needed for storage.

OUT OF RESIDENCE MEDICATION ADMINISTRATION

In some instances, individuals will have medications ordered for times when they are out of the residence, such as attending a day program or visiting with family. When this occurs, special arrangements should be made to ensure the individual will continue to receive the medication.

Agency policies will vary as to arrangements. Some recommendations are:

- send the medication bottle as dispensed by the pharmacist with the individual and/or family, or
- at the time the medication is prescribed, request the prescribing physician to write a separate prescription for the period of absence, or
- bring the medication bottle to the pharmacy and ask the pharmacist to dispense the needed amount into another labeled container, or
- ask the pharmacist to fill a prescription by dividing it into two separate labeled containers when advance knowledge of the period of absence is known.

Answer Self-Test Questions - The Medication Cycle-- C. Assisting in visit to Physician and Pharmacist

D. RECORDING AND STORAGE OF MEDICATIONS

THE FIFTH STEP IN THE MEDICATION CYCLE

Once you have obtained the necessary medication(s) from the pharmacist and have returned to your facility, you should record certain information on appropriate forms and store the medication properly. You will be using the information received from the physician and pharmacist to complete the documentation process.

Care and Storage of Medications

1. Medications must be safely locked in a storage container, i.e., lock box or medication cabinet, at all times except when the individual is taking the medications.
2. Drug supplies for each individuals must be stored under the proper conditions of sanitation, temperature, light, refrigeration and moisture.
 - a. Exposure to excessive heat over a period of time causes deterioration of some drugs.
 - b. Refrigeration is required for some drugs because they deteriorate if kept at room temperature. These drugs must also be locked in a storage container, for example a lock-box.
 - c. Exposure to light causes deterioration of some drugs. These must be kept in a dark bottle.
 - d. Bottles must always be capped when not in use to prevent deterioration of the medicine. Many drugs undergo chemical changes when exposed to air for a length of time.
3. Prescription drugs are to be obtained from a licensed pharmacy and are to be labeled with name, address, and telephone number of the pharmacy, the name of the individual, name and strength of the drug, directions for use, date filled, prescription number, the name of the physician or dentist, and the expiration date.
4. Non-prescription or over-the-counter (OTC) drugs and vitamins may be purchased anywhere and taken providing the following conditions are met:
 - a. the physician ordered the medication
 - b. the medication is maintained in original container.
 - c. the individual's name is taped to the container in such a manner as to not to obscure the original label.
5. Any drug container having detached, excessively soiled, or damaged labels must be returned to the pharmacy for re-labeling.

6. The contents of any drug container having no label or with an unreadable label must not be used. Follow your agency's procedure for disposing of medications.
7. Medications having specific expiration dates must not be used after the date of expiration.
8. Medication for **external use** must be kept in a separate area from those medications which are taken internally. This area must be labeled "**External Medications**".

Destruction of Medications

Medications must not be given after the expiration date on the container has passed. **These must be disposed of according to your agency's policies procedures.** Consult with your supervising nurse or pharmacist. There are special regulations from the Drug Enforcement Agency (DEA) regarding the disposal of **Scheduled drugs. NEVER dispose of medications yourself.**

Answer Self-Test Questions - Lesson 5: The Medication Cycle-- D. Recording and Storage of Medications

LESSON 6: MEDICATION ADMINISTRATION

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Record the procedure to determine the "Six Rights".
2. State procedure to follow when one of the "Six Rights" do not agree.
3. Record your responsibilities for individuals who need assistance with medications.
4. Record your responsibilities for individuals who are unable to administer medication themselves.
5. State procedure to follow when administering rectal and vaginal suppositories
6. Describe five (5) ways a medication error may occur and your responsibilities.
7. Discuss situations when medications should not be given.

The FINAL step in the medication cycle is MEDICATION ADMINISTRATION

The "Six Rights" of Medication Administration

1. Give the **Right medication**--compare the label on the medication container with the individual's medication administration record (MAR)
2. Give the **Right dose**--compare the order on the medication administration record (MAR) with the label on the medication. If it is different, ask the staff nurse for further instructions.
3. Give medication to the **Right Individual**--compare the name on the medication administration record (MAR) with the individual's Photo, I.D. band (or other means of identifying individual).
4. Give medication by the **Right route**--compare the medication administration record (MAR) and the medication label.
5. Give medication at the **Right time**--compare the medication administration record (MAR) and the medication label. Always chart the **exact time** the medication is administered. If not administered within one hour prior to or after the prescribed time, you must chart the exact time you administered it.
6. **Right documentation**--record medication immediately **after** it is given.

BEYOND THE 6 RIGHTS

Beyond the "Six Rights" of medication administration, there are some additional safeguards to follow that will help to minimize medication risks. These have been divided into three **DO's** and three **DON'Ts**.

- **DO** give your full attention to the task.
- **DO** remain with the individual until the medication has been taken.
- **DO** prepare medication for only one individual at a time.

- **DON'T** give a medication from a container which has a label that cannot be read.
- **DON'T** give a medication from another person's container.
- **DON'T** try to hide a medication error.

Before administering a medication, double check the medication record to be sure the medication is in the form ordered by the physician. If the medication record says capsules, be sure you have capsules and not tablets. The medication and record and pharmacy label should state the route (method) by which the drug should be administered. For instance, you might be instructed to **externally apply** an ointment to a rash. Follow the route directions carefully.

If you have **any** doubt as to whether the medication is the correct form as ordered, or can be administered as specified, call your supervisor before administering the medication.



Notify the nurse

Examples:

- If the medication in the container is in tablet form and the instructions say "apply externally," call your supervisor.
- If the individual has difficulty swallowing and the medication is in capsule form, call your supervisor.
- If the medication in the container is in a suppository form and the instructions say "take orally three times a day", call your supervisor.
- **Or if the label says capsule and you have tablets.**

GUIDELINES FOR INDIVIDUALS WHO NEED ASSISTANCE AND/OR SUPERVISION

For those individuals capable of self-administration of medication with assistance and/or supervision, the following procedure is recommended. Remember, that through this procedure efforts should be directed to encouraging and giving the individual every opportunity to do as much as possible.

PROCEDURE

1. Compare the MAR with drug label.
2. Assemble equipment: medication record, drinking glasses, straws, water, paper towels.
3. Have individual come to designated area.
4. Be sure individual washes hands before starting procedure.
5. If able, have individual select proper container from shelf. If not able to identify container, employee will.
6. Watch individual open container and remove correct dosage using proper equipment (medicine cup or container can to hand).
7. Remain with individual until medication is taken.
8. Record medication administration on the MAR
9. Observe individual for reaction.

KEY POINTS

To ensure right individual, right medicine, right dose.

Equipment should be clean and dry.

Individual's room or area where medication is kept.

Clean technique.

"Rule of Three"--Read label three times:

1. Before removing container from medicine cabinet.
2. Before pouring drug dose.
3. Before returning container to the medicine cabinet.

Helpful for individual if non-childproof caps or blister cards are used.

OR observe individual complete the recording.

PROCEDURE FOR ADMINISTRATION OF MEDICATIONS TO INDIVIDUALS WHO ARE NOT ABLE TO SELF-ADMINISTER

PROCEDURE

1. Compare the MAR with medication label.
2. Assemble equipment, medication, record, drinking glasses, straws, water, paper towel.
3. Wash hands thoroughly before measuring or preparing medication.
4. Read medication record.
for each dose of medicine, read the label three times.
5. Pour the accurate dose.

LIQUIDS

A. **Shake liquids** well. If solution has settled, shake until returned to suspension.

B. Pour liquid medication from the bottle **on the side opposite of the label**.

C. Hold medicine cup at **eye level**, on a **flat surface**, with the thumbnail marking the desired dosage and **read at lowest level** of fluid surface.

KEY POINTS

To ensure right individual, right drug, right dose, right method, and right time.

Work alone, prevent distractions or interruptions and have good lighting.

Maintain clean technique throughout procedure.

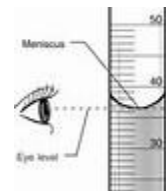
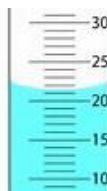
Minimize opportunity for error.

"Rule of Three" - Read the label:

1. Before removing container from medicine cabinet.
2. Before pouring the measured amount of drug.
3. Before replacing the container in the medicine cabinet.

To make sure the dose is accurate

To avoid soiling or defacing label, always place label against palm of hand and wipe outside of bottle before returning bottle to storage site.



PROCEDURE

- D. Pour liquid medication directly into calibrated cup.



TABLETS OR CAPSULES

- A. Pour correct number into cap of container.
- B. Empty cap into container such as a small paper cup.
- C. Place each dose of medicine in a separate container.

Administration of Poured Medications

- A. Identify individual and medication.
Read the information on MAR
- B. Explain the procedure to the individual.
- C. Individual should be in upright position.
- D. Check pulse, blood pressure, etc., if indicated.
- E. Check time.
- F. Check route (correct route).
- G. Hand medication and water to individual. If indicated, assist individual to take medication.
- H. Remain with individual until medication is taken.
- I. Observe individual for reaction.

KEY POINTS

Liquid may also be administered with teaspoons, but measurement is not as accurate.

May pour back and forth to get the correct number of pills

Do not touch medication with fingers.

Avoid mixing medications unless so ordered or unless individual is used to taking more than one medication at a time.

Make sure you give the right medication to the right individual.

Ensures cooperation and helps in teaching the individual.

Facilitates swallowing.

Check to see if individual has swallowed medication.

Reaction may not occur until after drug is absorbed (one or two hours later).

J. Document medication administration on the **MAR** The medication administration record can now be signed. Never sign the medication record until **after** the drug has been given.

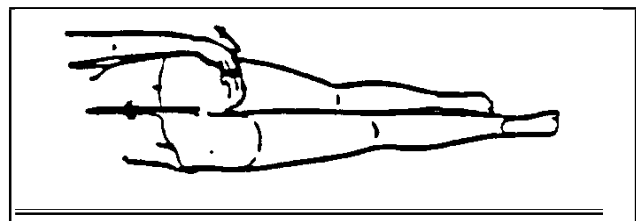
CLEAN-UP:

- A. Discard used medicine cups in a waste container.
- B. Wash hands.

Washing hands between individuals is adequate to maintain clean technique.

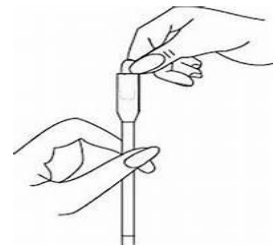
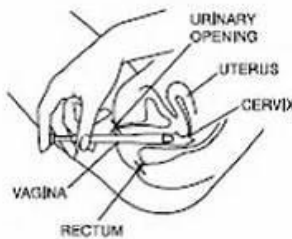
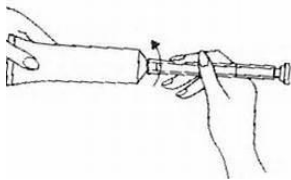
Procedure for the Administration of Rectal Suppositories

1. Wash hands.
2. Compare the order on the MAR to the label on the medication container.
3. Remove the outer wrap from the suppository.
4. Lubricate the pointed end of the suppository with a **water based** lubricant. Place the suppository on a tissue and avoid handling it as melting begins rapidly at **body temperature**.
5. Position the person on their **left side** in the privacy of their own room. Position the top leg up toward the abdomen.
6. Put on latex gloves.
7. Gently insert the lubricated tip of the suppository into the rectum the full length of your finger. The angle of insertion should be toward the umbilicus. Push the end of the suppository so that it touches the wall of the colon. It is not effective if inserted into the stool.
8. Remove gloves and dispose of them.
9. Wash hands.
10. Document on the medication record. Also, document any results from the suppository.



Procedure for the Administration of Vaginal Suppositories or Creams

1. Wash hands
2. Compare the order on the medication record to the label on the medication container.
3. Prepare the medication. Remove the wrap from suppository and/or load the applicator according to its instructions.
4. Have the individual go to her room and have her lie on her back.
5. Put on latex gloves.
6. Grasp the barrel of the applicator slightly downward, insert the applicator into the vagina as far as it will comfortably go. Now push the plunger with the index finger. Remove the applicator.
7. Instruct the individual to remain lying down for 15-30 minutes for absorption of the medication.
8. Separate the applicator, the barrel and the plunger
9. Remove gloves and dispose of them.
10. Wash hands.
11. Document on the MAR



Dorsal Recumbent Position

MEDICATION ADMINISTRATION RECORD (MAR)

The medication record is part of the individual's permanent record. It is an important record since it describes the medications used by the individual, the doses, the routes, and the times medications were taken.

Each agency will have a medication record which meets their specific needs. In general, a medication record will contain the following information:

1. The name of the agency or an identification code. (May also contain the address of the agency.)
2. The name of the individual taking the medication.
3. The month and the year the record is being kept for.
4. The name of the primary physician.
5. The names of the medications and how they are to be taken, as ordered by the physician.
6. The time the medications are to be taken.
7. Any drug sensitivities and allergies. If the individual has no allergies, then none noted or NKA (no known allergies) should be listed.
8. The initials of the CMA (Certified Medication Attendant) who assist or administers medication. The initials must be placed for each day and dose of medication given.
9. The signatures of all CMA (Certified Medication Attendant) who assisted/administered the meds.
10. The signature of the nurse who reviewed the record.

THE PRN MEDICATION RECORD

This section describes the procedures to be used in filling out the medication record or PRN or "as needed" medications. "As needed" medications are those medications prescribed by the individual's physician which are not taken on a set and specific schedule, but are to be **taken when needed**. Psychotropic drugs should not be given on an as needed basis.

Each time a **PRN** medication is taken, the name of the medication, the dosage, the date and time taken and the initials and or signature of the staff person are to be recorded on the **PRN** medication record. A copy of the **PRN** record can be found at the end of this section. **PRN results must also be documented.**

MEDICATION ERRORS

You have completed the study of the process of medication administration. However, at times no matter how strict we are in following procedures, an error can occur. The most important aspect to remember is, when an error occurs, **immediately report and record the error.**

A medication error occurs when any one or more of the "Six Rights" of medication administration is violated. For example:

- the wrong individual was given a medication
- the wrong medication was given to an individual
- the wrong dosage was given to an individual
- a medication was administered at the wrong time to an individual, or a medication was not given at all, and
- a medication was administered by the wrong route

If a medication error occurs, you should call your supervisor and/or other personnel as designated by the policy and procedures of your agency.

Most agencies require some form of documentation describing the error. When you report the error, both by phone and in writing, be sure to include the following information.

- WHO - the individual and staff member involved in the error
- WHAT - what type of error was made
- WHEN - when the error occurred

WHEN NOT TO GIVE MEDICATIONS: There may be occasions when it is the appropriate time to administer medications, **BUT** unusual circumstances require that you do **NOT** proceed. For example:

Discrepancy with Medication Label and/or Medication Record. If medication administration record is incomplete and/or the medication label is not readable, **STOP**. Contact your supervisor for further directions.

Individual Exhibits a Dramatic Change in Status. If the individual is showing signs of seizures, unconsciousness, difficulty in breathing, or other changes which appear to be health-threatening, do not administer the medication. Follow the instructions given for reporting an emergency or non-emergency health-threatening situation.

Wrong Individual, Medication, Time, Route. If you have any doubt that you have the right individual, right medication, right dosage, right time, or right route, get assistance from another staff member or call your supervisor before administering the medication.

Individual Refuses to Take Medication. Explain to the individual why it is important to take the medication as prescribed by the physician and encourage the individual to cooperate. If individual still refuses, do not force him or her to take the medication. Remember, the individual has the right to refuse medication. Call your supervisor and follow his or her instructions and document the situation.

QUESTIONS YOU SHOULD BE ASKING ARE:

"What physical and behavioral changes are occurring which may be a result of the medication/s?", and last but not least, "Is the medication working?"

The process of administering medications is an on-going cycle of observation, recording, reporting, physician and pharmacy visits, documentation, storage of medication, and on and on. Each staff member, whether he/she administers medications or not, has responsibilities in this medication cycle.

The MAR Exercises

Note placement of each on the following sample MAR.

- A. The name of the agency or identification code.
- B. The name of the individual taking the medication and diagnosis.
- C. The month and the year the record is being kept for.
- D. The name of the primary physician.
- E. The name of the medication and how they are to be taken.
- F. The time the medications are to be taken
- G. Any drug sensitivity and allergies. If the individual has no allergies then NKA should be listed.
- H. The initials of the CMA.
- I. The signatures of all CMA's who assisted/administered medications.
- J. The signature of the nurse who reviewed the record.

Review the following on the **sample MAR** for the client John Smith.

Agency: XYZ
Client: John Smith
Physician: Dr. J. Needles

Medication Ordered: phenytoin 100mg tid po

Date:	July 7, 2016	Note agency policy dictates times, XYZ Agency Policy states 8a, 12p, 8p as tid times.
Date:	July 15, 2016	Physician changed phenytoin to 100mg bid po after morning dose.
Date:	July 20, 2016	Physician added Lithium 5mg bid po. Note XYZ agency policy states bid times as 8a and 8p.
Date:	July 25, 2016	Physician discontinued phenytoin 100mg bid after morning dose.
Date:	July 28, 2016	John Smith c/o headache and was given two tablets of Tylenol 325mg at 7pm. This order was obtained from the physician standing order list of PRN medications. Note: Documentation of PRN results.
Date:	July 29, 2016	Physician orders Benadryl 25mg po q 6 hours PRN for itching.

MEDICATION ADMINISTRATION RECORD

CLIENT: Smith John

DATE OF BIRTH: _____

MEDICATIONS		HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31									
phenytoin 100mg take one by mouth three times daily	8A								00	00	00	00	00	00	00	00	00																									
									00																																	
	12N								00	00	00	00	00	00	00	00		7/15/16 Frequency changed see below																								
7/7/2016	8P								00	00	00	00	00	00	00	00																										
Lithium 5mg take one by mouth twice daily	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	8A																					00	00	00	00	00	00	00	00	00	00	00	00									
	8P																					00	00	00	00	00	00	00	00	00	00	00	00									
7/20/2016																						00	00	00	00	00	00	00	00	00	00	00	00									
phenytoin 100mg take one by mouth twice daily	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	8A																	00	00	00	00	00	00	00	00	00																
																					7/25/16 Discontinued																					
	8P																	00	00	00	00	00	00	00	00	00																
Benedryl 25 mg take one by mouth every six hours for itching as needed	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	P																																									
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7/29/2016																																										
	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										

DOCTOR'S ORDERS, MEDICATION NOTES, AND INSTRUCTIONS ON REVERSE SIDE

CHARTING FOR:	DATE:	THROUGH:
PHYSICIAN:	Dr. J. Needles	TELEPHONE NO. 555-555-5555
ALLERGIES:	NKA	
DIAGNOSIS	S Bipolar Disorder, Seizure Disorder	Agency: XYZ Agency

Add the following medications to your **exercise MAR** on the following page:

Date:	July 5, 2016	Erythromycin 250mg po tid x 7 days. Medication is received at 4 pm.
Date:	July 8, 2016	Depakote 500mg po bid and 1000mg hs. You receive 500mg tablets at 2 pm.
Date:	July 10, 2016	Mellaril 100mg po tid x 10 days then give Mellaril 100mg bid. You receive meds at 2 pm.
Date:	July 10, 2016	At 8 pm client refuses medications.

Additional Information:

Sometimes a physician will eliminate the medication from the client's medication regimen. This would be a **DISCONTINUATION** order and the medication would be **REMOVED** from the MAR. Remember to remove the medication from the client's medication supply and place it in medications to be destroyed.

Other times the physician will want to **change the amount** or the **number of doses** of medication the client is receiving. In this case the order is referred to as a **CHANGE**. The client will still receive the medication. **Only the dosage or number of times to be taken will be changed. The individual will still be taking the medication.**

Note above situations on the **Sample MAR**.

Answer Self-Test Questions - Lesson 6: Medication Administration

CLIENT: _____ DATE OF BIRTH: _____

[illegible]

DOCTOR'S ORDERS, MEDICATION NOTES, AND INSTRUCTIONS ON REVERSE SIDE

CHARTING FOR: DATE:		THROUGH:
PHYSICIAN:		TELEPHONE NO.
ALLERGIES: NKA		IF SELF-MEDICATED SIGN HERE: _____
DIAGNOSIS:		
SIGNATURE OF EMPLOYEES ADMINISTERING MEDICATION (INCLUDE INITIALS)		
_____		_____
_____		_____
_____		_____
_____		_____

[illegible][illegible]

CHART SIDE	NOTES SIDE
1. INITIAL APPROPRIATE BOX AFTER MEDICATION IS GIVEN	1. STATE REASON FOR REFUSAL OF MEDICATION
2. CIRCLE INITIALS WHEN MEDICATION IS REFUSED	2. STATE REASON AND RESULTS FOR PRN MEDICATIONS

LESSON 7: DOCUMENTATION

OBJECTIVES

At completion of this lesson, you will be expected to:

1. List the general rules of charting.
2. List the rules for charting medications.
3. Know what an individual stop order is.
4. Know what observations are important to chart.

The chart provides a medical profile of each individual and is admissible as evidence in court. It is very important that documentation be done accurately and immediately after the administration of any medication.

It is also important that when charting, all staff members chart in the same manner. This allows for accurate tracking of the individual's health since all staff members are consistent in what and how they chart.

A doctor's order is required before any member of the residential staff can administer a medication. The medication order must contain eight basic parts for it to be valid. It is the responsibility of the personnel administering medications to follow the written orders. However, you have the right and responsibility to question any medication order you are not comfortable following. When in doubt, contact your supervisor about this order.

I. Contents of the Chart -- (see agency policy)

II. General Rules of Charting

- A. Legibility is very important--write or print so the information you chart can be read easily by others.
- B. Use durable ink--the color will be determined by agency policy.
- C. **Never erase or obliterate an entry**--when you make a mistake, draw a single line through the incorrect words, write "error" or "void" above them, and initial the entry. Correction fluid (White Out) is not allowed. You must be able to see what was originally written.

Void KC

Ex: Administered ~~two~~ pills. Administered one pill

- D. Chart in time sequence--do not leave blank space or lines between entries.
- E. Be accurate and concise--be sure the date on your entry is correct and include the time if it is significant to the care of the individual.
- F. If you use medical terminology, be sure it is spelled correctly and accurately describes what you observe, and use only approved abbreviations.
- G. Chart what you see, hear, smell, or touch, not what you think or feel. Do not chart opinions. Do not make diagnoses.
- H. Chart the individual's response or lack of response to a medication.
- I. Sign your entry with your complete name or your first initial and last name. Use the method designated by your agency.

III. Rules for Charting Medications

- A. Chart as soon as possible after a medication is administered.
- B. Every medication given must be charted for the correct individual and include the following information:
 - 1. Name and dosage of medication
 - 2. Time of administration
 - 3. Route of administration
- C. Routine medications are usually charted by putting your initials in the appropriate box on the medication record, and by signing your complete name and title in the appropriate space on the medicine sheet.
- D. The effects of PRN medication must be charted after an appropriate period of time. For example, an hour or so after a pain medication is given, observe and chart the individual's level of pain. (See agency policy)
- E. Chart medication omission according to agency policy (for example: with a circle "O" In the appropriate square on the medication sheet with your initials inside the circle "O") and chart the reason for omission on the back of the medication sheet. Whenever you see a circle "O" on the front of the MAR there is an explanation on the back.
- F. Medications are charted **after** they are given **NOT BEFORE**.

IV. Administering Medications Appropriately Requires

- A. Knowledge of expected drug actions.
- B. Knowledge of possible adverse effects.
- C. Knowledge of agency policies and charting.
- D. Charting accurately and legibly.
- E. Spelling correctly.

REMEMBER: IF IT IS NOT CHARTED AND LEGIBLE, IT IS NOT CONSIDERED DONE!

V. Parts of an Order (Documentation by Physician)

- A. Individual's name
- B. Name of medication
- C. Route of administration
- D. Frequency of administration (may include time of day)
- E. Dosage
- F. Duration (for how long, number of doses)
- G. Doctor's signature
- H. Miscellaneous information (number of refills, take on an empty stomach, do not take with milk products, etc.)

VI. Individual Stop Orders

- A. A medication may be ordered for a specific time or number of doses and must be documented, such as:
 - 1. Amoxil 250 mg. q6h x 28 doses
 - 2. Septra Tab qd x 14 days
- B. Giving an extra dose and giving a dose at the wrong time are errors.

Answer Self-Test Questions - Lesson 7: Documentation

LESSON 8: INTRODUCTION TO USE OF MEDICATION REFERENCES

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. List 3 sources for obtaining additional information about prescription and over-the-counter drugs.
2. Know how to appropriately use additional sources.

Several sources are available for obtaining additional information about prescription and over-the-counter drugs. These references include:

1. Online resources
2. Package Brochures will be included in over-the-counter medications
3. Your Pharmacist and Agency Nurse
4. Medication Guides accompanying prescription medications

I. ONLINE RESOURCES

- a. **Drugs.com** - is the most popular, comprehensive and up-to-date source of drug information online. Providing free, peer-reviewed, accurate and independent data on more than 24,000 prescription drugs, over-the-counter medicines & natural products.
- b. **www.fda.gov/Drugs/default.htm**- online information provided by the U.S Food and Drug Administration providing information on drugs and health issues.

II. PACKAGE BROCHURES

Before a new drug is marketed, the manufacturer develops a comprehensive but concise description of the drug, indications and precautions in clinical use, suggestions for dosage, known adverse actions, contraindications and other pharmacologic information relating to the drug. In addition, **Federal Law requires that a brochure accompany each package of the product.**

The brochure must be **approved by the FDA** before the product can be released for marketing.

III. YOUR PHARMACIST AND AGENCY NURSE

Valuable resources within your agency are your pharmacist and agency nurse. They can provide information and answer questions that you may have about medications.

IV. MEDICATION GUIDES - Medication Guides are **paper handouts that come with many prescription medicines**. The guides address issues that are specific to particular drugs and drug classes, and they contain Food and Drug Administration (FDA)-approved information that can help patients avoid serious adverse events. The FDA requires that Medication Guides be issued with certain prescribed drugs and biological products when the FDA determines that:

- certain information is necessary to prevent serious adverse effects
- patient decision-making should be informed by information about a known serious side effect with a product, or
- patient adherence to directions for the use of a product are essential to its effectiveness.

Prior to administering medications it is important for the CMA to have knowledge of the medication's therapeutic effect, potential side effects and any medication or food interactions.

Answer Self-Test Questions - Lesson 8: Introduction to use of Medication References

LESSON 9: MEDICATION CLASSIFICATIONS - OVERVIEW

OBJECTIVES

At the completion of this lesson you will be expected to:

1. Define classification
2. Give the action, use, adverse effects and special considerations for each drug classification.
3. Give two examples of each drug classification.

Classification is defined as a means to arrange or put in a class on the basis of resemblances or differences. A drug may be classified by the chemical type of the **active ingredient** or by the way it is used to treat a particular condition.

Medications are classified according to the therapeutic effect they have on a particular system of the body.

Overview/Medication Classifications

A. Gastrointestinal system

1. Antacids

- a. **Action**--neutralize acidity by chemical reaction
- b. **Uses**--treat indigestion, ulcers
- c. **Examples**
 - i. Gaviscon®
 - ii. Maalox ®
 - iii. Riopan ®
 - iv. Mylanta ®
 - v. Di-Gel ®
 - vi. Gelusil ®
- d. **Adverse effects**--may cause mild constipation or diarrhea

2. Proton Pump Inhibitors

- a. **Action**—reduces the production of acid in the stomach
- b. **Uses**—gastroesophageal reflux disease (GERD) and ulcers
- c. **Examples**
 - i. Protonix ®
 - ii. Nexium ®
 - iii. Aciphex ®
 - iv. Prilosec ®
 - v. Prevacid ®
- d. **Adverse effects** - headache, diarrhea, constipation, pain, flatulence

- e. **Special Considerations:** Because drug can interfere with absorption of vitamin B12, monitor for anemia. Be aware that long-term use of medication may increase the risk of gastric carcinoma.

3. H2 Receptor Antagonists

- a. **Action**— inhibits histamine at the H2 receptors and leads to a reduction in secretion of gastric acid
- b. **Uses**—gastroesophageal reflux disease GERD and gastrointestinal ulcers
- c. **Examples**
 - i. Zantac ® (ranitidine)
 - ii. Pepcid ® (famotidine)
 - iii. Tagamet ® (cimetidine)
- d. **Adverse effects** - abdominal pain (or stomach pain), constipation, and diarrhea
- e. **Special Considerations:** Administer with meals for prolonged effect; antacids one hour before or after dose.

4. Antidiarrheals

- a. **Action**--stops diarrhea
- b. **Use**--treat diarrhea
- c. **Examples**
 - i. Pepto-Bismol ® (bismuth subsalicylate)
 - ii. Imodium AD ® (loperamide)
 - iii. Kaopectate ® (kaolin/pectin mixtures)
 - iv. Lomotil ® (diphenoxylate HCL)
- d. **Adverse effects**
 - i. Drowsiness
 - ii. Fatigue
 - iii. Rash
 - iv. Constipation and fecal impaction

5. Laxatives

- a. Saline laxative
 - i. **Action**--increase fluid in the intestine
 - ii. **Use**--promote bowel action
 - iii. **Example**
 - aa. Milk of Magnesia ® (magnesium salts)
 - bb. Fleet Enema ® (sodium bisphosphate)
 - iv. **Adverse effects**
 - aa. Diarrhea
 - bb. Cramping
- b. Bulk laxative
 - i. **Action**--increase bulk in the stool
 - ii. **Use**--promote bowel action

- iii. **Examples**
 - aa. Metamucil ® (psyllium fiber)
 - bb. Mitrolan ® (calcium polycarbophil)
- iv. **Adverse effects**
 - aa. Nausea and vomiting
 - bb. Diarrhea
 - cc. Laxative dependence
- c. Stool softeners
 - i. **Action**--soften fecal material
 - ii. **Use**--treat constipation
 - iii. **Examples**
 - aa. Docusate sodium (Colace ®, Doxinate ®)
 - bb. Sometimes combined with other drugs (Senokot-S ®, Doxidan®, Dialose-Plus ®, Peri-Colace ®)
 - iv. **Adverse effects**
 - aa. Mild cramping
 - bb. Laxative dependency
 - v. **Special considerations**
 - aa. Give with milk or fruit juice
 - bb. Do not crush medication
- d. **Lubricants**
 - i. **Action**--make stool slippery
 - ii. **Use**--treat constipation
 - iii. **Examples**
 - aa. Mineral Oil
 - bb. Haley's M.O. ®
 - cc. Glycerin suppository
 - iv. **Adverse effects**
 - aa. Nausea
 - bb. Abdominal cramps
 - cc. Incontinence
- e. Stimulant laxatives
 - i. **Action**--stimulate bowel lining
 - ii. **Use**--increase peristalsis, bowel training
 - iii. **Examples**
 - aa. Dulcolax ® (bisacodyl)
 - bb. Senokot ® (senna)
 - cc. Dulcolax ® Suppository
 - iv. **Adverse effects**
 - aa. Diarrhea
 - bb. Cramping
 - v. **Special consideration**--tablet must be swallowed without chewing.

B. Musculoskeletal System

1. Steroid medications

- a. **Action**--decreases inflammation
- b. **Uses**--treat arthritis, dermatitis, chronic respiratory conditions
- c. **Examples**
 - i. Decadron ® (dexamethasone)
 - ii. Sterapred ®, Deltasone ®, (prednisone)
 - iii. Medrol ®, Depo Medrol® (methylprednisolone)
 - iv. Cortef ® (hydrocortisone)
 - v. Kenalog® (triamcinolone diacetate)
- d. **Adverse effects**
 - i. Weight gain from increased appetite and edema
 - ii. Mood swings
 - iii. Night sweats
 - iv. Increased blood sugar and electrolyte imbalance
 - v. Masks symptoms of infection
 - vi. Slows healing
 - vii. Elevates blood pressure
 - viii. Ulcers
 - ix. Muscle weakness
 - x. Hair loss
 - xi. Cushing Syndrome (caused by too much cortisol in the body)
 - xii. Prolonged bleeding and bruising
- e. **Special considerations**
 - i. Watch diabetic individuals for change in urine glucose or fasting blood sugar.
 - ii. Withdrawal symptoms occur if medication is stopped abruptly.

2. Nonsteroidal anti-inflammatory drugs (NSAIDs)

- a. **Action**--anti-inflammatory analgesic and antipyretic effects
- b. **Uses**--arthritis, bursitis, tendonitis, gout
- c. **Examples**
 - i. Indocin® (indomethacin)
 - ii. Advil ®, Motrin ® (ibuprofen)
 - iii. Meclomen ® (meclofenamate)
 - iv. Aleve ®, Anaprox ® (naproxen sodium)
 - v. Aspirin (A.S.A., Bayer ®, Ecotrin ®)
- d. **Adverse effects**
 - i. Nausea and vomiting
 - ii. Headaches
 - iii. Gastrointestinal bleeding
 - iv. Dizziness
 - v. Heartburn

- vi. Rashes
- vii. Decreased appetite
- viii. Prolonged bleeding and bruising
- ix. Tinnitus
- e. **Special consideration**--observe individual for blood in the stool which may indicate gastrointestinal bleeding. Blood will initially appear as black, not red in color. Individual may vomit substance resembling "coffee grounds".

C. Skin System (Dermatomucosal medications)

1. **Action**--cleanse and medicate skin
2. **Uses**--treat blemishes, prevent new blemishes, and prevent scarring
3. **Examples**
 - a. **Topical**
 - i. Benzoyl peroxide (Benoxyl ®, Oxy-5 ®)
 - ii. Tretinoin ® (retinoic acid)
 - iii. Antibiotic lotions
 - b. **Systemic**
 - i. tetracycline
 - ii. prednisone
 - iii. ibuprofen
4. **Adverse effects**
 - a. Peeling skin
 - b. Allergic contact dermatitis
5. **Special considerations** for benzoyl peroxide
 - a. Many preparations are available without prescription.
 - b. Start with a 5% preparation, applying once a day in the morning.
 - c. This drug inactivates retinoic acid--do not use these 2 drugs at the same time.

D. Sensory system

1. **Lubricants (eye medication)**
 - a. **Action**--soothe and lubricate dry eyes
 - b. **Use**--treat decreased tear production
 - c. **Example**--artificial tears (Restasis ®, Liquifilm® Tears ®)
 - d. **Adverse effect**--localized irritation and burning sensation
 - e. **Special considerations**
 - i. Use with caution in individuals with glaucoma.
 - ii. Do not touch any surface of the eye with the end of the dropper.
 - iii. Crust forming on the eyelids and eyelashes indicate an eye infection.

2. Ear medications

- a. **Action**--relieve pressure, reduce inflammation, and reduce pain in the ear
- b. **Use**--external otitis, pain
- c. **Examples**
 - i. Auralgan® (benzocaine)
 - ii. Cortisporin Otic®
- d. **Adverse effects**--irritation or itching
- e. **Special consideration**
 - i. Do not rinse dropper after use.
 - ii. Insert cotton into the ear canal after applying the drops and allowing the drops to drain into the inner ear. (Monitor cotton in ear and remove as needed).
 - iii. Many of these medications are used in combination with oral antibiotics, analgesics, and anti-inflammatories: watch for drug interactions.

E. Urinary system (Urinary antiseptics)

- 1. **Action**--prevent growth of disease-producing organisms in the urinary tract
- 2. **Use**--to treat urinary tract infections
- 3. **Examples**
 - a. NegGram® (nalidixic acid)
 - b. Furadantin® (nitrofurantoin)
 - c. Macrochantin® (nitrofurantoin)
- 4. **Adverse effects**
 - a. Drowsiness
 - b. Headache
 - c. Nausea and vomiting
 - d. Dizziness
 - e. Skin rash
- 5. **Special considerations**
 - a. Individual should avoid exposure to sunlight.
 - b. May cause a false-positive Clinitest. (This test shows how much (glucose) in a person's urine)
 - c. Individual should report vision problems.
 - d. Drink plenty of water (6-8 glasses per day).
 - e. Avoid cola and caffeine drinks.

F. Cardiovascular system (Antihypertensives)

1. Ace Inhibitors

- a. **Action**—works by relaxing blood vessels so that blood can flow more easily.
- b. **Use**--treat hypertension and heart failure
- c. **Examples**
 - i. Prinivil®, Zestril® (lisinopril)

d. **Adverse effects**

- i. Dizziness and irregular heartbeat
- ii. Cough, sore throat
- iii. Ankle swelling
- iv. Elevated potassium levels (should be checked frequently)

2. **Beta adrenergic blocking agents**

- a. **Action**--block sympathetic stimulation of the heart reducing systolic blood pressure, heart rate and output.
- b. **Use**--treat angina, control abnormal heart rhythms and to reduce high blood pressure
- c. **Examples:**
 - i. Tenormin ® (atenolol)
 - ii. Toprol XL ® (metoprolol)
- d. **Adverse effects**
 - i. impairs thinking or reaction time
 - ii. decreased sex drive, impotence, or difficulty having an orgasm
 - iii. sleep problems and insomnia
 - iv. tired feeling
 - v. anxiety or nervousness

2. **Diuretics**

- a. **Action**--decrease blood pressure and increase urinary output
- b. **Uses**--treat congestive heart failure, hypertension, and severe edema
- c. **Examples**
 - i. Aldactone ® (spironolactone)
 - ii. Diuril ®, Hydro Diuril ® (chlorothiazide)
 - iii. Lasix ® (furosemide)
 - iv. Aldactazide ® and Dyazide ® (combinations containing hydrochlorothiazide)
- d. **Adverse effects**
 - i. Dizziness
 - ii. Weakness
 - iii. Nausea and vomiting
 - iv. Hypotension
 - v. Tremors

G. Respiratory system--Antihistamines

- 1. **Action**--combat the effects of histamine, which is released by the body in an allergic reaction
- 2. **Use**--treat motion sickness and allergic reactions
- 3. **Examples**
 - a. Benadryl ® (diphenhydramine)
 - b. Chlor-Trimeton ®, Teldrin® (chlorpheniramine)

- c. Phenergan ® (promethazine)
- d. Claritin ® (loratidine)
- e. Dimetapp ®
- 4. **Adverse effects**
 - a. Drowsiness (most common)
 - b. Dizziness
 - c. Loss of appetite
 - d. Dry mouth
 - e. Urinary retention
- 5. **Special considerations**
 - a. Do not give with alcohol or other depressants.
 - b. Individuals can develop a tolerance to the medication.

H. Endocrine system (Oral contraceptives)

- 1. **Action**--inhibit ovulation
- 2. **Use**--regulation of menstrual cycle, prevent pregnancy
- 3. **Example**--estrogen with progesterone (Ortho Tri-Cyclen ®, Estrostep ®)
- 4. **Adverse effects**
 - a. Headache
 - b. Weight gain
 - c. Hypertension
 - d. Thrombophlebitis
 - e. Edema
 - f. Breast tenderness
 - g. Vaginitis
 - h. Nausea

I. Nervous system

- 1. **Stimulants (Caffeine)**
 - a. **Action**--increase mental and physical alertness and activity
 - b. **Use**--increase activity
 - c. **Examples**--coffee, caffeine drinks, some aspirin compounds
 - d. **Adverse effects**
 - i. Nervousness
 - ii. Headache
 - iii. Insomnia
 - e. **Special considerations**
 - i. Sudden discontinuation may cause headaches and irritability.
 - ii. Psychological dependence or tolerance may develop.
- 2. **Depressants**
 - a. **Analgesics**
 - i. **Action**--decrease sensitivity of nervous system
 - ii. **Use**--relieve pain

- iii. **Examples**
 - aa. Duramorph ®, Epimorph ® (morphine sulfate)
 - bb. Codeine
 - cc. Demerol ® (meperidine HCl)
 - dd. Tylox ®, Percocet ®, Percodan® (oxycodone HCL)
- iv. **Adverse effects**
 - aa. Constipation
 - bb. Nausea and vomiting
- v. **Special considerations**
 - aa. Addictive
 - bb. A bowel management system should be followed.

b. Non-narcotic analgesics

- i. **Action**--decrease sensitivity of nervous system
- ii. **Use**--relieve pain
- iii. **Examples**
 - aa. Darvon® (propoxyphene)
 - bb. Darvocet N-100 ®
- iv. **Adverse effects**
 - aa. Dizziness and confusion

c. Analgesic-antipyretics

- i. **Action**--decrease sensitivity of nervous system
- ii. **Use**--relieve pain and normalize body temperature
- iii. **Examples**
 - aa. Aspirin, ASA (acetylsalicylic acid)
 - bb. Tylenol ® (acetaminophen)
 - aa. Bleeding
 - bb. Stomach distress
 - cc. Dizziness
 - dd. Tinnitus (ringing in the ears)

3. Anti-Parkinson's medications

- a. **Action**--relieve symptoms of Parkinson's Disease
- b. **Use**--relieve tremors and muscular weakness, treat extrapyramidal effects of major psychotropic medications
- c. **Examples**
 - i. Cogentin ® (benztropine mesylate)
 - ii. Artane ® (trihexyphenidyl HCl)
 - iii. Akineton ® (biperiden)
 - iv. Sinemet ® (levodopa-carbidopa)
- d. **Adverse effects**
 - i. Incoherence
 - ii. Hallucinations
 - iii. Nausea

- iv. Heart irregularities
 - v. Constipation
 - vi. Muscle weakness
 - vii. Lethargy
- e. **Special consideration**--many of these drugs are given in combination with other drugs to achieve the best results.

J. Nutritional deficiencies (Vitamins)

1. Thiamine HCL (Vitamin B₁)
 - a. **Action**--necessary for carbohydrate metabolism
 - b. **Uses**--treat alcoholism, gastrointestinal disease, and cirrhosis
 - c. **Adverse effects**
 - i. Hypotension
 - ii. Nausea
 - iii. Sweating
 - iv. Anaphylactic reaction
 - v. Diarrhea
 - vi. Restlessness
2. Pyridoxine HCl (Vitamin B₆)
 - a. **Action**--required for amino acid metabolism
 - b. **Use**--in combination with isoniazid (INH) therapy, which causes B₆ deficiency
 - c. **Adverse effects**--drowsiness
 - d. **Special consideration**--do not give to an individual receiving Levodopa
3. Ascorbic Acid (Vitamin C)
 - a. **Action**--necessary for collagen formation and tissue repair
 - b. **Uses**--burns, increase healing of fractures and wounds, may prevent viral infections
 - c. **Adverse effects**
 - i. Diarrhea
 - ii. Renal calculi
4. Folic Acid (Vitamin B₉)
 - a. **Action**--necessary for normal erythropoiesis and nucleoprotein synthesis
 - b. **Uses**--treat liver disease, alcoholism
 - c. **Adverse effects**
 - i. Rash
 - ii. Malaise
 - iii. Bronchospasms as an allergic reaction

5. Niacinamide (Vitamin B₃, Nicotinic Acid)
 - a. **Action**--necessary for fat metabolism
 - b. **Uses**--lowers cholesterol, treat Meniere's Disease, vasodilator
 - c. **Adverse effects**
 - i. Headache
 - ii. Facial flushing
 - iii. Itching
 - iv. Jaundice
 - v. Postural hypotension
 - d. **Special consideration**--give with meals and cold liquids.

6. Multivitamin products--contain a combination of vitamins and minerals
 - a. **Action**--source of vitamins
 - b. **Use**--supplement diet
 - c. **Examples**
 - i. Becotin-T ®--contains several B vitamins and Vitamin C
 - ii. Multicebrin ®--contains Vitamins B, C, E, A, and D
 - iii. Theragram ®--contains Vitamins A, B complex, C, D, & E
 - d. **Adverse effects**
 - i. Itching
 - ii. Diarrhea
 - iii. Nausea
 - e. **Special consideration**--do not crush medication.

EXAMPLES OF DRUGS WITHIN CLASSIFICATIONS

Some drugs are in two or more classifications since they can be used for more than one condition.

ANALGESICS

aspirin
 Darvon Compound 65 ®
 Tylenol ®
 Tylenol with codeine ®

ANTACIDS

Gelusil ®
 Maalox ®
 Milk of Magnesia ®
 Mylanta ®

ANTIBIOTIC AND ANTIBACTERIALS

ampicillin
 erythromycin
 Garamycin ®
 Keflex ®
 tetracycline

ANTICONVULSANT

Dilantin ®
 Neurontin ®
 Tegretol ®
 Valium ®

ANTHELMINTICS

Stromectol ®
Albenza ®
Vermox ®

**ANTIASTHMATICS AND
BRONCHODILATORS**

Advair Diskus ®
Epinephrine®
Xopenex ®

ANTIDIARRHEAL PREPARATIONS

Imodium AD ®
Lomotil ®
Pepto Bismal ®

ANTIHISTAMINES

Actifed ®
Benadryl ®
fexofenadine
Zyrtec ®

ANTIPYRETICS

aspirin
APC Compound Tablets ®
Tylenol ®

DIURETICS

Diuril ®
Hydrodiuril ®
Lasix ®

LAXATIVES

Dorbane
Dulcolax ® Tablets and Suppositories
Glycerin Suppositories
Peri Colace ®
Mira-Lax ®
Senokot ®

ANTIDEPRESSANTS

Prozac ®
Lexapro ®
Celexa ®

ANTIDIABETIC AGENTS

glipizide
Metformin ®
Actos ®

OPHTHALMIC PREPARATIONS (Eye)

Cortisporin Ophthalmic Ointment ®
Restasis ®
Visine Eye Drops ®

OTIC PREPARATIONS (Ear)

Auralgan Otic Drops ®
Cortisporin Otic Drops ®
Debrox Otic Drops ®

STIMULANTS

Adrenalin ®
Dexedrine ®
Ritalin ®

TRANQUILIZERS AND SEDATIVES

trazodone
Ativan ®
hydroxyzine
Lorazepam ®
phenobarbital
Thorazine ®
Valium ®
Vistaril ®

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 1. VITAMINS AND MINERALS

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Recognize the role diet plays in supplying vitamins and minerals.
2. List four (4) situations when supplemental vitamins and minerals may be required.
3. State your responsibility when administering vitamins and minerals.
4. Define Hematinic medications.
5. List two (2) side effects of Hematinics.
6. Describe two (2) ways to reduce side effects of Hematinics.

VITAMINS AND MINERALS

Vitamins are substances that regulate body processes. You probably know them by their letter names: A, B-complex, C, D, E, and K. Vitamins help to build strong teeth and bones, promote growth, aid normal body functioning, and strengthen resistance to disease.

Minerals help build tissues, especially bones and teeth. They also regulate body fluids, such as blood and digestive juices. The minerals we need in our daily diet include calcium, phosphorus, sodium, potassium, iodine, iron and fluoride.

Vitamins and minerals are present in a wide variety of foods. A balanced diet usually provides enough vitamins and minerals and it is not necessary to take additional vitamins. However, there are some periods when it is necessary to take additional vitamins and minerals, such as during times of:

- Poor Nutrition
- Illness
- Pregnancy
- Periods of Growth

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING VITAMINS AND MINERALS:

The best situation is to encourage individuals to eat a nutritionally sound diet. However, if a physician orders vitamins and minerals for an individual, your major responsibilities are:

- **FOLLOW LABEL DIRECTIONS.**
- **STORE VITAMINS IN A COOL, DARK PLACE.**
- **FOLLOW DOSAGES EXACTLY AS ORDERED. OVERDOSAGE CAN CAUSE TOXICITY.**

HEMATINICS

Iron is a mineral which is very important in the formation of hemoglobin. Of all the minerals, supplemental iron will probably be the one required most. Iron preparations fall into the medication classification **HEMATINICS**.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING HEMATINICS:

As with most medications, Hematinics have some common side effects which include:

- **ABDOMINAL CRAMPING, AND**
- **CONSTIPATION**

These side effects can be reduced if Hematinics are given right after meals and the individual is encouraged to drink a minimum of six glasses of fluids per day.

Hematinics will cause the stools to turn a tarry black color. This is harmless, but it is important to **tell the individual** that this will occur. In addition, liquid iron preparations should be given through a straw, as they can stain the teeth.

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 2. MEDICATIONS THAT AFFECT THE RESPIRATORY SYSTEM

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the respiratory system.
2. Given a specific medication classification, state at least two (2) side effects.
3. State responsibilities, other than observation, for side effects when administering medications in these classifications.
4. Discuss allergic response in terms of its development and symptoms.
5. Define anaphylactic shock and list four symptoms.
6. State the emergency medication used in anaphylactic shock.

The medication classifications which will be discussed in this section are:

- **ANTIHISTAMINES** - Medications that reduce the effects of histamine, relieving allergy symptoms. May also be used to prevent motion sickness.
- **EXPECTORANTS** - Medications that break up mucous, and facilitate its expulsion from the lungs.
- **ANTITUBERCULARS** - Medications that are used to treat tuberculosis.
- **ANTITUSSIVES** - Suppresses cough reflex.

IMMUNITY AND ALLERGIC RESPONSE - An allergic response may occur when a person comes in contact with a substance not normally present in the body, such as bacteria, pollen or medications. These substances are called antigens. Development of immunity depends on the body's ability to identify antigens, then produce antibodies to protect itself. You may develop immunity in different ways:

1. **Natural Immunity** - you are borne with the immunity
2. **Acquired Immunity** - you become immune after having a disease or being given a vaccine.

ALLERGIC RESULTS

When a person who has a tendency to become allergic first comes into contact with a specific antigen, antibodies are formed. When he comes in contact with this antigen again, an antigen-antibody reaction occurs. This results in the release of **histamine**.

It is histamine that causes the typical symptoms of an allergic response.

- Red, Watery Eyes
- Sneezing
- Runny Nose
- Rash-Hives

With the exception of a skin rash and hives, these symptoms are the same as those of a common cold. However, another **more extreme reaction called anaphylactic shock** may occur. This is a life threatening, rapidly occurring allergic reaction.

In addition to allergic symptoms, **the person will become short of breath due to swelling in the throat and will become apprehensive**. If at this point there is no treatment, the allergic response becomes stronger and the symptoms will progress to:

- Neck & Facial Swelling
- Restlessness & Agitation
- Weak, Fast Pulse
- Low Blood Pressure

These symptoms **require emergency treatment**. The most common medication used is Epinephrine (Adrenaline), a very strong bronchodilator which is given by injection (see table on bronchodilators for more information).

Medications are the most frequent causes of anaphylactic shock. However, you may also have heard of people dying after being stung by a bee. This is a good example of anaphylactic shock. What has happened is that the person is highly allergic to the bee venom. People have also been known to develop serious reactions following ingestion of foods and/or medications.

Since people with a history of allergies are more likely to develop anaphylactic shock, it is imperative that any person with a past history of allergies be watched closely when receiving new medication.

ANTIHISTAMINES

The antihistamine medications act as **ANTAGONISTS** to prevent or reduce the symptoms of an allergy. They exert their greatest beneficial effect in nasal allergies. The antihistamines do not prevent or effectively relieve asthma. Problems usually relieved by antihistamines are:

- Common Colds
- Hives
- Insect Bites
- Medication Reactions
- Nasal Allergies

Some antihistamines are effective in preventing or relieving motion sickness. Many antihistamines are available in oral, topical or inhalant preparations.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIHISTAMINES:

Antihistamines potentiate (strengthen) the actions of central nervous system (C.N.S.) depressants. Therefore, when an individual is taking an antidepressant, central nervous system depressants should be avoided. Some common C.N.S. depressants to avoid are alcohol, sedatives, and tranquilizers. The most common side effects are:

- Drowsiness
- Dry Mouth

Sucking hard candy or chewing gum will help prevent mouth dryness.

Table 2.1 lists some specific antihistamines and side effects.

Table 2.1
Antihistamines Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
diphenhydramine (hydrochloride)	Benadryl®	Tablet & Liquid	Relieve symptoms of allergic reaction and motion sickness	Drowsiness, dry mouth, dizziness, nasal stuffiness, blurred vision	Use with caution if used with central nervous system depressants	Warn client against drinking alcohol, driving, and other activities which require alertness.
*chlorphiramine	Chlor-Trimeton®	"				
promethazine	Phenergan®	"				
*dimenhydrinate	Dramamine®	"				
meclizine	Bonine® Antivert®	"				

* Non-Prescription Medication

EXPECTORANTS AND ANTITUSSIVES

Expectorants are medications that affect the mucous membrane lining of the respiratory tract and **facilitate the expulsion of the mucous (sputum)**. Some expectorants and antitussives contain codeine and morphine derivatives to depress the cough reflex. These medications are not given to individuals with tuberculosis, however, because coughing is desired to expel the sputum.

Antitussives are preparations that **depress the cough reflex**. Expectorants and antitussives are often combined and referred to as cough preparations.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING EXPECTORANTS AND ANTITUSSIVES:

Many of these cough preparations contain sugar and alcohol. Alcohol could produce a medication interaction and the sugar content may be a problem if the individual is a diabetic.

In general, side effects that may occur are:

- Drowsiness
- Nausea
- Vomiting

Also, it is best to advise the individual not to drink or eat anything for at least a half hour after taking these preparations and to administer cough preparations after other medications which may be ordered at the same time. Now review the following table for specific medications (Table 2.2)

Table 2.2

Expectorants & Antitussive Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
guaifenesin	Robitussin AC® (with Codeine)	Liquid	Liquefies secretions and relieves cough.	Nausea, vomiting, drowsiness.	Many cause preparations contain sugar. Always use caution when giving to a diabetic.	Use with caution in head injury, seizures, alcoholism.
diphenhydramine	Benylin®	"			Hold food/fluid for one half hour after administering.	

BRONCHODILATORS

Asthma is a disease marked by recurrent spasms of difficult labored breathing with sneezing, coughing and a sense of chest tightening due to constriction of the bronchial tree. In many cases, this condition is an allergic reaction produced as a result of an antigen-antibody reaction. Bronchodilators relax the constriction of the bronchial tree.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING BRONCHODILATORS

Some side effects that may occur when taking bronchodilators are:

Nervousness	Restlessness
Vomiting	Nausea
Headache	Sweating

Table 2.3 will provide you with additional information on bronchodilators.

Table 2.3

Bronchodilator Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
epinephrine	Adrenaline®	Injection, Inhalation, Liquid	Asthma, Emphysema Allergic Responses; as in hay fever.	Nervousness, Nausea, vomiting, headache, flushed face, increase pulse, increased voiding, dizziness	Tricyclic anti-depressants potentiate the actions of Bronchodilator.	Use with caution in diabetics these medications may increase blood sugar.
theophylline	Aminophylline®	Rectal Suppository	Chronic Bronchitis, Emphysema	"		Aminophylline is a CNS stimulant and is widely used for many conditions. It has different classifications. Reassure individuals who are upset by the "pounding" in the chest.
isoproterenol	Isuprel® Isonorin® Medihaler®	Inhalation		Palpitation, sweating, flushing		

ANTITUBERCULAR

The last classification of medications to be discussed in relation to the respiratory system is the anti-tubercular medications that are used to treat tuberculosis.

Tuberculosis (TB) is a chronic infection most commonly associated with the lungs. In this country, TB is less common than it used to be. However, due to increased immigration, it has become more common and individuals who have TB require long term treatment.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING

ANTITUBERCULARS--Side effects which may occur are:

- Nausea
- Fever
- Vomiting
- Rash

These medications should be given after meals which helps reduce the nausea and vomiting that may occur. See Table 2.4 for antitubercular medications.

Table2.4**Antitubercular-Agents**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
para-amino salicylic acid	PAS ®	tablet	Tuberculosis	Nausea, vomiting, fever, skin rash	Give after meals to reduce gastric upset.	Supplements of vitamin B ₆ are often used.
isoniazid	INH ®			In addition to above some numbness in hands and feet		INH is destroyed by light.

NOTE: The antibiotic streptomycin may be given in conjunction with PAS ® and INH ®.

Answer Self-Test Questions - Lesson 10: Section 2 --Medications That Affect the Respiratory System

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 3. GENERAL AND LOCAL ANTI-INFECTIVES

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classification of medications used as anti-infectives.
2. Given a specific medication classification, list at least three (3) side effects.
3. State responsibilities, other than observation for side effects, when administering medications in these classifications.
4. Describe the difference between broad and narrow spectrum antibiotics.
5. Describe how to determine if an individual has a history of allergies.
6. List foods/liquids which should be avoided by a person taking antibiotics.

The medication classifications which will be discussed in this Section are:

- **ANTIBIOTICS** - Medications that are used to destroy or control bacteria.
- **ANTIFUNGALS** - Medications that are used to treat fungus infections.
- **AMEBICIDES** - Medications that destroy protozoa.
- **ANTHELMINTICS** - Medications that are used to rid the body of worms.
- **TRICHOMONACIDES** - Medications that destroy Trichomona.

INTRODUCTION:

Infection may be **local and visible**, such as an infected cut. The signs would include redness, swelling and pain around the cut. Infection may also be **general or systemic**, involving more than one area in the body, such as pneumonia. Signs of a general infection may include elevated temperature, cough, "rundown" feeling, poor appetite, and shortness of breath.

When individuals demonstrate any signs or symptoms of an infection, they should be seen by a physician. The physician may order antibiotics, medications that destroy or control bacteria.

ANTIBIOTIC MEDICATIONS

There are literally thousands of types of bacteria; therefore, it is necessary to have many different antibiotic medications. It is important to know that **some antibiotics are bacterial specific (Narrow Spectrum) and the bacteria should be identified before an antibiotic is prescribed.** The procedure for bacterial identification involves obtaining a specimen from the infected area (throat, urine, mucous from lungs) and sending the

specimen for laboratory analysis. The laboratory technician will determine whether the bacteria is **gram positive** or **gram negative** because each type produces different infections which respond to different antibiotics.

Each antibiotic has its own characteristic range (spectrum) of activity against various bacteria. Antibiotics that are effective for both gram positive and gram negative bacteria have a broad range of activity and are called broad spectrum.

Broad Spectrum Antibiotics they are effective against both Gram Positive and Gram Negative Bacteria

Narrow Spectrum Antibiotics effective against specific families of bacteria either Gram Positive or Gram Negative.

Broad spectrum, narrow spectrum, gram positive and gram negative are ways of defining the usefulness of a specific antibiotic. Identifying bacteria is by a process called Bacteria Gram staining. In a **Gram** stain test, **Gram-positive bacteria** retain the crystal violet dye, while a counterstain (commonly safranin or fuchsine) added after the crystal violet gives all **Gram-negative bacteria** a red or pink coloring.

In an ideal situation, when a person has signs of an infection, the physician orders a specimen sent to the laboratory and waits for the results before ordering a specific antibiotic. However, this often presents problems because a report may take several days to be done. Therefore, when a person is seriously ill, the physician may immediately start the individual on a broad spectrum antibiotic. When the lab report comes back, it may be necessary for the doctor to order a different antibiotic or the initial antibiotic may still be the medication of choice.

Toxic Reactions are Rare, but usually are Serious When They Occur--Signs of toxic reactions that may be observed are:

- Decreased Urinary Output
- Change in Skin Color
- Lack of Energy
- Hearing Impairment

ADMINISTRATION AND CARE OF ANTIBIOTICS

Before administration of an antibiotic, you **must** determine if the individual has ever had an allergic reaction to an antibiotic. Ask the individual:

- Have you ever taken antibiotics?
- After taking pills, have you ever had itching or a rash?

If there is any indication that the individual has ever had an allergic reaction, you should seek guidance.

The general care and storage of antibiotics is very important. All antibiotics break down with age, heat and moisture. Their effectiveness can change if improper storage occurs. Always read the label for storage directions, such as:

- **"Refrigerate" or "Store in a Dry, Cool Area"**
- Antibiotics always have an expiration date:
 - Check Expiration Date, and
 - Never Use after That Date

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIBIOTICS:

The discovery of antibiotics was a great breakthrough for medicine and the medications were often referred to as "miracle medications." However, there are some cautions for prescribing and administering antibiotics.

Antibiotics should be restricted to use in serious infections only. They should never be given for minor infections because with frequency or prolonged use the body tends to become resistant to the antibiotic activity and, in the event of a serious infection, antibiotics may not be as effective.

Major cautions to be aware of in connection with antibiotics are as follows:

ALLERGIC REACTION

Allergic reaction (as discussed in Section 2) is any abnormal response or reaction to a foreign substance. An antibiotic is a foreign substance to the body. An allergic reaction can occur immediately after the person takes the antibiotic or after the person has been on the medication for several days.

The allergic response may range from mild to life-threatening, such as an inability to breathe and low blood pressure that can lead to circulatory collapse and coma. This is called anaphylactic shock and is a life or death emergency. The key word is **shock** and the immediate treatment is according to first aid principles.

TOXIC REACTIONS

Another important reason why antibiotics are prescribed with caution is toxic reactions. Toxic means **poisonous** or **dangerous**, which means certain antibiotics can be very dangerous to some **organs** in the body. In general, antibiotics produce few toxic effects, but because the toxic effects can be life-threatening or leave permanent damage, it is important to be aware that a toxic reaction can occur.

In general, when a person begins to take antibiotics, he/she feels better and symptoms begin to subside. However, this does not mean the person is cured. The **entire prescription** should be taken unless the doctor orders it is to be stopped. In summary, your responsibilities when administering antibiotics include:

- Observe for toxic reactions, allergic reactions and other infections.
- Inquire for history of allergies.
- Read label for storage directions and expiration date.
- Give antibiotics on time.
- Use entire prescription unless orders are changed.

As you recall from previous content, there are many varieties of bacteria that cause infection. Consequently, different infections require different antibiotics. Table 3.1 will describe the penicillins.

Table 3.1

Penicillins

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
ampicillin	Amcill ® Omnipen® Polycillin ®	Capsules, Liquid	Broad Spectrum	Gastric Upset, nausea, vomiting	Some foods lower effectiveness, AVOID caffeine, tomatoes, fruit juices, cola drinks, pickles	Give at least two hours after or one hour before a meal.
Oxacillin sodium penicillin G, potassium G	Bactocill ® Pfzerpen ® K-Cillin-500 ® Pentids ®	Capsules Tablets & Injections				
penicillin V, potassium	V-Cillin K ® Veetids ® Pen-Vee-K ®	Tablets & Liquid				

ERYTHROMYCINS

These medications work against many gram-positive infections. Because they kill many of the same germs as penicillin, erythromycins are a good substitute to use for people with penicillin allergies. Allergic reactions to erythromycins are rare, and side effects are limited to nausea and vomiting. Examples of trade name preparations of erythromycins are Illosone ®, Erythrocin ®, E-mycin® and E.E.S. ®.

CEPHALOSPORINS

This group of antibiotics are similar to the penicillins. They are broad-spectrum medications used mainly for penicillins in cases of allergy or resistance and in the treatment of certain gram negative infections. The cephalosporins should be given at least one hour before or two hours after eating (Table 3.2)

Table 3.2
Cephalosporins

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
cephalexin	Keflex ®	Tablets & Liquids	Respiratory & Urinary Tract infections	Nausea, vomiting, headache, diarrhea, genital & anal itching.		Use cautiously in those with history of sensitivity to penicillin, Tell patient to take with food or milk to lessen GI discomfort.
cefuroxime	Ceftin ®	Tablets & Injection				

MISCELLANEOUS ANTI-INFECTIVES

Antibiotics are not useful for all types of infections. There are some miscellaneous anti-infective agents developed to treat other specific infections.

ANTIFUNGAL

Antifungal agents are used to treat infections of the hair, skin, nails, mouth and vagina. These medications produce a selected spectrum of activity and only affect certain fungi. Review Table 3.3 to determine side effects and your responsibilities when administering these agents.

Table 3.3
Antifungal Agents

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
amphotericin B	Fungizone ®	Lotion & Injection	Broad spectrum for fungi in the gastro-intestinal system.	Headache, Anorexia, diarrhea & burning at site of injection	Rare	
nystatin	Mycostatin ®	Liquid & Vaginal suppository	Mouth wash for thrush, & suppository for vaginal infections	Large oral dose may cause nausea & vomiting.		Oral solution-individual swishes in mouth & swallows. Teach individual to insert vaginal suppository.

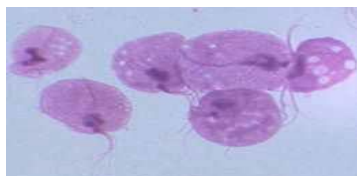
AMEBICIDES AND TRICHOMONACIDES

Amoeba are micro-organisms which are responsible for producing dysentery in humans. This infection gains access to the body through contaminated food and water. Dysentery is generally found in areas with low standards of hygiene. However, it may also be found in areas where there is overcrowding. Signs of dysentery will vary from mild to severe diarrhea, poor appetite, dehydration and fatigue.

Amebicides act to destroy **amoeba type** infections. Side effects may include: Nausea, Vomiting, Diarrhea.

Amebicides: Observe individuals on these medications closely. Encourage good hygiene.

TRICHOMONAS is a disease that is frequently transmitted through sexual intercourse. The signs and symptoms are more evident in the female and are a vaginal itch, burning and discharge. In the male, the only sign is a penile discharge. Treatment is the same for both sexes. Oral tablets may be ordered and/or suppositories to be inserted in the genital areas. Vaginal douches may be ordered for females.



Trichomona under the microscope

Trichomonacides act to destroy trichomonal infections. Side effects may include: Nausea, Headache, Diarrhea, Vaginal and Urethral Burning. **Responsibilities when administering these medications include:**

- Instructing individuals in douching.
- Teaching methods of vaginal suppository insertion.
- Encouraging individuals not to have sexual intercourse until infection is cleared.

Table 3.4 lists some common amebicides and trichomonacides.

Table 3.4
Amebicides and Trichomonacides

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
metronidazole	Flagyl ®	Tablets & Vaginal Suppository	Protozoal infection, Trichomoniasis	Nausea, Vomiting & topical skin irritations	Rare	Give tablet with food or milk.

ANTIPARASITIC DRUGS

Parasitic skin infections can be quite common in any environment. This is especially true in areas where many people live closely together. Parasitic skin infections include the following: Scabies, Body Lice (Pediculosis Corporis), Head Lice (Pediculosis Capitis), and Pubic Lice.

SCABIES: Scabies produce tiny red spots between the fingers, in the arm pits, on the genitalia and abdomen. Severe itching accompanies the red spots. The skin above the neckline is rarely affected because the parasite grows in warm, moist areas.

Products used to treat scabies are called **scabicides** because they kill scabies mites; some also kill mite eggs. Scabicides used to treat human scabies are available only with a doctor's prescription. **No "over-the-counter"** (non-prescription) products have been tested and approved to treat scabies.

Scabicide should be applied **to all areas of the body from the neck down to the feet and toes**. In addition, when treating infants and young children, scabicide also should be applied to their entire head and neck because scabies can affect their face, scalp, and neck, as well as the rest of their body. The scabicide should be applied to a clean body and left on for the recommended time before washing it off. Clean clothing should be worn after treatment. **The instructions contained in the box or printed on the label always should be followed carefully. Always contact a doctor or pharmacist if unsure how to use a particular medicine.**

HEAD LICE: Head lice are usually demonstrated by the presence of small, white dots called nits (eggs) in the hair. Pediculosis of the body and pubis is accompanied by itching. Signs of infestation may be: individual scratching, sore skin from scratching, and presence of eggs (nits).

Many head lice medications are available "**over-the-counter**" without a prescription at a local drug store or pharmacy. Each over-the-counter product approved by the FDA for the treatment of head lice contains one of the following active ingredients.

- **Pyrethrins** combined with piperonyl butoxide; Brand name products: A-200*, Pronto*, R&C*, Rid*, Triple X*, Licide
- ***Permethrin lotion, 1%**; Brand name product: Nix*.

NOTE: NEVER use shampoos or lotions on broken skin areas

FOLLOW LABEL DIRECTIONS EXACTLY. If crawling lice are still seen after a full course of treatment contact your health care provider.

CAUTIONS: If one individual has an infection, all individuals in close contact should be examined. All clothing and bedding should be machine washed or dry cleaned. Your agency may have a procedure for infestation. If so, follow the agency's direction.

ANTHELMINTICS: Anthelmintics are medications which **destroy worm infections**.

Parasitic worm infections are a major cause of disease throughout the world. However, in the United States the most frequently encountered parasitic infections are limited to pinworm, roundworm and tapeworm. These parasites gain access to the gastrointestinal tract when food or soil has been contaminated with worm eggs and is ingested. Symptoms of infection may be: diarrhea, nausea, loss of appetite and abdominal cramps. If the individual is heavily infected, you may see worm in the stools.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTHELMINTICS:

When an individual is taking anthelmintics, the following side effects may occur:

Nausea	Headache
Fever	Diarrhea

Usually laxatives are also administered to increase intestinal activity and facilitate bowel movements so that worms and eggs are excreted into the stools.
(See Table 3.5).

Table 3.5
Anthelmintics

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
tetrachloroethylene	same	Gelatin capsule	Hookworm	Nausea, Vomiting, Cramps, Diarrhea	Stomach upset can be reduced if given when the stomach is empty.	Remind client not to chew Gelatin Capsule as they have a very bitter taste.
thiabendazole	Mintezol ®	Tablet & Liquid	Hookworm, pinworms	Above symptoms plus confusion and drowsiness.		
hexylresorcinol	same	Tablet	All types of worms	Nausea, Vomiting, Cramps, Diarrhea		

Answer Self-Test Questions - Lesson 10: Section 3 --General and Local Anti-Infectives

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 4. MEDICATIONS THAT AFFECT THE CARDIOVASCULAR SYSTEM

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the cardiovascular system.
2. Given a specific medication classification, list at least three (3) side effects.
3. State responsibilities, other than observations for side effects, when administering medications in these classifications.
4. List three (3) signs that may indicate lack of potassium.
5. Describe the relationship between salt and hypertension.

The medication classifications which will be discussed in this Section are:

- **DIGITALIS PREPARATIONS** - Medications which slow and strengthen the heartbeat.
- **ANTIARRHYTHMICS** - Medications used to correct disorders of the heart rate and rhythm.
- **VASODILATORS** - Medications used to increase the size of blood vessels.
- **DIURETICS** - Medications used to increase urinary output.
- **ANTIHYPERTENSIVES** - Medications used to lower blood pressure.
- **ANTICOAGULANTS** - Medications which decrease clot formation.
- **COAGULANTS** - Medications which increase clot formation.

RELATED INFORMATION

The cardiovascular system may be thought of as a transportation system. It takes nourishment and oxygen to the cells and carries away waste products. The system is kept in motion by the force of the heartbeat. Disease which attacks any part of this system interferes with the overall function.

CARDIAC CYCLE

The cardiac cycle is what determines the pulse rate. Each time the heart beats, a pulsation may be felt in an artery. This pulsation is referred to as the pulse. Normal pulse rate will vary with the size, age, activity, and sex of the person. Average rate for adults (age 18 and over) is 60 – 100 beats per minute

When medications are given for cardiovascular disorders, it may be required that the individuals pulse and/or blood pressure is taken before the medication is given. The reason is that most of these medications in some way will affect the pulse and/or blood pressure.

PULSE

With each beat of the heart, blood is forced into blood vessels called arteries, causing an expansion of vessel walls. This can be felt by the fingers in certain places where the arteries lie close to the surface of the body. This expansion is called the pulse.

The number of beats per minute is the pulse rate. The spacing of the beats and time interval between beats is known as the rhythm. Rhythm is either regular or irregular. **All** irregularities should be reported to the nursing supervisor.

The pulse rate for infants and children is more rapid than for the average adult. As a child reaches adulthood the pulse rate decreases to approximately 70-72 per minute. The average pulse rate at various ages are as follows:

<u>Age</u>	<u>Pulse Rate (beats per minute)</u>
Newborn to eleven months	120
2 years	110
4-6 years	100
Children (ages 6 - 15)	70 – 100 beats per minute
Adults (age 18 and over)	60 – 100 beats per minute

HOW TO COUNT PULSE RATE

Pulse is counted before certain drugs are given.

1. Wash hands
2. Gather equipment: watch with a second hand, pencil, paper.
3. Identify individual and explain the procedure to the individual
4. Position individual. (Lie down or sit down and have palm of individual's hand facing down with arm supported.)
5. Place the tips of your index, second and third fingers on the palm side of your other wrist below the base of the thumb.
6. Press lightly with your fingers until you feel the blood pulsing beneath your fingers. You may need to move your fingers around slightly up or down until you feel the pulsing.

7. Use a watch with a second hand, or look at a clock with a second hand.
5. Count the beats you feel for one full minute
8. Record pulse rate immediately on paper. (Do not rely on memory)
9. If pulse rate is below 60 and/or any irregular beats or volume are noted, report immediately to person in charge.
10. Wash hands



BLOOD

If the blood vessels are the network of highways carrying nutrients and wastes, the blood may be thought of as the trucks and cars traveling along the highway. A person generally has 4 to 6 liters (quarts) of blood depending on size, sex, age, and general health. Both the quality and quantity of blood are indicative of health. There are two types of blood cells. They are: Red Blood Cells (RBC) which carry oxygen to cells and carbon dioxide away from the cells, and White Blood Cells (WBC) which protect the body from infection by destroying germs.

Disease conditions of any part of the circulatory system will have an effect on the total system. In general there are two main conditions for which the (heart) medications are used: heart failure and irregular heartbeat.

Heart "failure" means that the heart has failed as a pump. When a person is in good health, the heart accomplishes circulation without faltering. Thus, it does not allow an abnormal amount of blood to accumulate in the veins, in the heart chambers, or in the lungs. The rate of flow is sufficient to provide normality throughout. A failing heart may have such a handicap that it is unable to move blood satisfactorily. Digitalis preparations may be ordered which will change the rate, rhythm and strength of the heartbeat.

DIGITALIS PREPARATIONS

Medications used in the treatment of heart failure are obtained mainly from the digitalis family. The most common are: **digitoxin** and **digoxin** (Lanoxin ®). The primary action of these medications is to **slow** and **strengthen** the heartbeat.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING DIGITALIS PREPARATIONS

It must be emphasized that digitalis preparations are **extremely strong**. As with all medications, be absolutely sure you administer the correct **medication** and dose. These preparations sound alike and have similar spelling. In order to avoid errors, check the label and **look closely at the spelling and at the dose prescribed**.

As you remember, **the action of digitalis is to slow and strengthen the heartbeat**. Therefore, a major responsibility when giving a digitalis medication is to **count the pulse prior** to administering each dose. In adults, if the **pulse is below 60** the medication should be held and the physician or nurse notified immediately for further directions. Take pulse also before Inderal ® (propranolol) is administered.

The side effects of digitalis preparations may include:

- Loss of Appetite
- Nausea or Vomiting
- Visual Disturbances
- Headache
- Diarrhea

ANTIARRHYTHMIC MEDICATIONS

These medications regulate the heartbeat. **Always check the pulse rate** before administering these drugs. In adults, if the pulse is below 60 beats per minute, the **medication should be held** and the physician or nurse be notified immediately for further direction. Blood pressure should also be monitored and notify the nurse of any abnormal readings.

Table 4.1

Antiarrhythmic Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
quinidine sulfate	Cin-Quin ® Quinidex ®	Tablet	Slows heart rate and increases strength	Diarrhea, Skin rash, loss of appetite, nausea, vomiting, confusion Occasional low blood pressure, mental depression	May be given with food to decrease stomach upset.	Before giving medication, check pulse; if below 60 hold medication and notify nurse or physician.
procainamide hydrochloride	Pronestyl ®	Tablet				
propranolol	Inderal ®	Tablet		Constipation/ diarrhea	Give before meals. Food may decrease the effectiveness of the medication.	Smoking should be avoided.

DRUGS THAT AFFECT THE BLOOD VESSELS

Abnormal conditions affecting the arteries and veins are many in number and variety. Medications may be used to increase or decrease the size of the blood vessels and thus affect the flow of blood through them.

VASODILATORS

Vasodilators **increase the size of the blood vessel** which, in turn, increases circulation. Hardening of the arteries (arteriosclerosis) is a fairly common problem. Arteriosclerosis results in a decreased blood flow. This decrease in blood flow may cause severe chest pain (angina) and poor circulation to the extremities.

Vasodilators may be used routinely to prevent chest pain and increase circulation. However, you may also see them used during an attack of chest pain to reduce the severity of the pain.

Nitroglycerine is the most common medication used for chest pain and is administered sublingually. (Tablet is held under tongue and allowed to dissolve). Nitroglycerin works very fast and the chest pain is relieved within seconds. If an individual is using nitroglycerin, **they should keep it with them or readily accessible.**

Individuals should be given specific directions and guidance if they carry the medicine with them. Nitroglycerine deteriorates readily and becomes inactivated by light, heat, air, moisture and age. The individual or the direct care giver should be responsible for proper storage of these medications. In addition, individuals should be instructed to report when they take the medication as they will help us to know:

- How often pain occurs?
- How much medication is taken?
- If medication relieves pains?
- When does individual get relief

Alcohol should be avoided when a person is taking vasodilators because alcohol can also act as a vasodilator and can potentiate (add to) the medication's action.

Nitroglycerine is also available as an ointment (Nitro-Bid ®). The ointment comes with a dose measuring applicator. The ointment can be applied to any convenient skin area, but most people use the chest area. Specific directions for application technique may be supplied by the pharmacist. Do not touch ointment with your fingertips. It is also available in a patch.

Side effects that may occur with vasodilators are:

*Headache	*Low Blood Pressure	*Nausea/Vomiting
*Dizziness	*Weakness	*Skin Rash

The following tables give additional information on vasodilators.

Coronary vasodilators are used for chest pain and peripheral vasodilators are used to increase circulation in the extremities (Tables 4.2 & 4.3).

**Table
4.2**

**Coronary
Vasodilators**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
amyl nitrite	Amyl Nitrite ®	Inhalation, Cloth covered ampule which is crushed and fumes inhaled	Acute chest pain	Flushed face, Headache, Pupil dilation, nausea, dizziness	Always avoid alcohol when taking these medications	Lie down when taking medication.
nitroglycerin	Nitro-Bid ® Glytrate ®	Sublingual Tablet-Relief in 1 - 2 minutes				If individual is independent in medication use we should know how often they use medication, whether relief is partial or complete and whether there are any side effects. Avoid alcohol
isosorbidedinitrate	Isordil ® Iso-Bid ®	Sublingual Tablet, Chewable Tablet				

**Table
4.3**

**Peripheral
Vasodilators**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
papaverine hydrochloride	Blupar ® Pavacot ® Pavabid ®	Tablet	Dilates peripheral vessels to improve circulation	flushed face, headache, nausea, vomitting, dryness of mouth and throat, arrhythmias, sweating	Give with meal to reduce stomach upset.	If urine turns very dark contact physician.

HIGH BLOOD PRESSURE (HYPERTENSION)

Hypertension, a condition in which blood pressure is abnormally high, is one of the leading causes of strokes, heart attacks, and kidney disease. An estimated 24 million Americans have hypertension disease. In the majority of hypertension cases (approximately 90 percent), the cause of hypertension is unknown; the goal of medication therapy is to lower the blood pressure without causing excessive side effects.

Before discussing medications used to treat hypertension, some information about **SALT** and **DIET** is important. Salt is a mineral necessary for good health. However, people tend to overuse salt. Salt can contribute to hypertension as it holds water in the body. The increased water content increases the blood pressure. Therefore, if foods high in salt are avoided, blood pressure will be lower. In addition to salt, overweight is a factor contributing to hypertension. So people who are overweight should be encouraged to lose weight.

There are two classifications of medications used to treat hypertension: diuretics and antihypertensives.

(See Tables 4.4 and 4.5)

ANTIHYPERTENSIVES

Antihypertensives are medications that are used to treat high blood pressure (hypertension).

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIHYPERTENSIVE DRUGS

The major caution to observe with these medications is to monitor blood pressure. The possible side effects which may occur with antihypertensive medications are:

- Fatigue
- Nasal Congestion
- Loss of Appetite
- Dizziness
- Dryness of Mouth

In general, **nasal congestion and dryness of mouth** are most common when individuals begin taking these medications. Instructing the individual in good oral hygiene will help relieve mouth dryness. Review Table 4.4 for some common antihypertensives and specific side effects.

Table 4.4
Antihypertensives

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
hydralazine hydrochloride	Apresoline®, Hydralazine®	Tablet	Hypertension	Loss of appetite, headache, tachycardia, nausea, vomiting, diarrhea	Give with meals to increase absorption	Individual may become dizzy when first standing.
prazosin clonidine alpha methylodopa	Minipress® Catapres® Aldomet®			Low pulse, rash, fever, fatigue		May darken urine.

NOTE: Minor tranquilizers may be given for high blood pressure.

DIURETICS--Diuretics increase urinary and salt excretion. They may cause a loss of potassium. Potassium is necessary for skeletal and heart muscle function.

Signs of potassium (K+) depletion are:

- muscle weakness
- fatigue
- leg cramps
- irregular heartbeat

To avoid potassium depletion, the physician may order to encourage the individual to eat foods that are high in potassium content or the physician may order a supplement. If signs of potassium depletion are noticed, notify your nurse.

Table 4.5
Diuretics

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
acetazolamine	Diamox®, Hydrazol®	Tablet	High Blood Pressure	Potassium loss, nausea, dizziness, numbness of extremities, irritability, diarrhea, skin rash, loss of appetite, eyes sensitive to sun light.	Avoid monosodium glutamate (MSG) which is seasoning often used in Oriental food. May be taken with food to decrease stomach upset.	Tolerance after prolonged administration may necessitate an increase in dosage. No supplemental potassium.
chlorothiazide	Diuril®					
hydrochlorothiazide	Hydrodiuril®					
spironolactone	Aldactone®	Tablet	Rid body of excess fluid and reduce blood pressure.			
furosemide	Lasix®	Tablet & Injection				Consult with physician or dietitian to provide high potassium diet.

ANTICOAGULANTS--This group of medications are related to blood clotting. Blood clot formation is a process which is essential to life. Without this process, a person with a simple cut would hemorrhage and survival could be threatened. However, sometimes this mechanism of clot formation is inadequate and creates physical problems.

Anticoagulants are medications which decrease clot formation. The reverse of this is also possible. The clotting mechanism may be insufficient and the clotting process is inadequate. **Coagulants increase clot formation.**

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTICOAGULANTS

The major caution to observe with anticoagulation therapy is the possibility of hemorrhage. The signs and symptoms related to hemorrhage are:

- Nose Bleeds
- Blood in the Stools
- Bleeding Gums
- Black and Blue Marks
- Blood in the Urine
- Change in Vital Signs

The most common anticoagulant is Warfarin sodium, see Table 4.6.

Table 4.6

Anticoagulant

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
warfarin sodium	Coumadin,® Panwarfin ®	No average dose, Dosage is ordered to correlate with blood test results, Tablets are available in 2, 2.5, 5, 7.5, 10, & 25 mg sizes.	Will not dissolve existing clots, but will help prevent new clots from forming.	Hemorrhagic accidents are the chief danger of anticoagulant therapy first signs that this may be occurring are: blood in urine, nose bleeds, bleeding gums. Individual will develop black & blue marks easily. Diarrhea, nausea, cramps, rash, loss of hair.	Medications which increase anticoagulant action = aspirin, quinidine, phenothiazides, chloral hydrate, thyroid preparations, alcohol, phenytoin, oral contraceptives.	Prothrombin times are the blood tests which are done routinely when individuals are on anticoagulants. Have individual use electric razor, give medication at same time each day.

Newer medications such as **Pradaxa ®** and **Xarelto ®** are also prescribed and can cause internal bleeding issues. Observe for coffee ground material in vomit or black tarry stools. If either is noted report to physician immediately. Easy bruising, dizziness, pale skin, and fatigue. These signs indicate internal bleeding.

Answer Self-Test Questions--Lesson 10: Section 4--Medications That Affect the Cardiovascular System

LESSON 10: MEDICATION CLASSIFICATION
SECTION 5. MEDICATIONS THAT AFFECT THE URINARY SYSTEM

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the urinary system.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities other than observation for side effects, when administering medications in these classifications.

RELATED INFORMATION

The urinary system is also referred to as the excretory system. As the name implies, the organs of this system produce urine (liquid waste) which is excreted from the body. The urinary system also helps to control the vital water and salt balance of the body. The organs of this system include: the kidneys, ureters, urinary bladder and urethra.

The medication classifications which will be discussed in this lesson are:

SULFONAMIDES

The sulfonamides were the first medications developed to combat infection. Antibiotics eventually replaced sulfonamides for general infections. However, Sulfonamides remains the medication of choice for urinary tract infections.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING SULFONAMIDES

- Increase fluid intake up to two quarts per day and avoid foods high in calcium.
- Side effects to watch for are:
 - Nausea
 - Vomiting
 - Diarrhea
 - Blood in Urine
 - Skin Rash

Please review Table 5.1 for additional information on sulfonamides.

Table 5.1

Sulfonamides

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
sulfisoxazole	Gantrisin®	Tablet	Urinary Tract Infection	Nausea, vomiting, diarrhea, urinary tract stones, serious skin rash, blood in urine, sensitivity to sun light.	Avoid over use of calcium rich foods.	Increase fluid intake to up to two quarts per day to help avoid stone formation.

URINARY ANTISEPTICS

These medications are used to treat urinary tract infections. Many people who have had a urinary tract infection have recurrences following a period without symptoms. For this reason, they are often placed on long-term medication therapy. Most of the sulfonamides, as well as some systemic antibiotics such as the **erythromycins** may be used to treat these conditions.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING URINARY ANTISEPTICS

Some urinary antiseptics will change the color of the urine. Inform the individual that this may occur. Also, many of these medications may cause stomach upset, therefore, they should be administered with meals or food whenever possible. Some medications work best when the urine is strongly acid or basic; so depending on the medication, it may be necessary to either encourage or discourage fluids and foods high in acid. Your responsibilities include:

- Inform individual of color change in urine;
- Encourage fluid intake - 1-2 quarts/day;
- Find out if acid or base medium is desired

TABLE 5.2
Urinary Antiseptics

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
nitrofurantoin	Furadantin ®, Macrochantin ®	Tablet	Most Urinary tract infections	nausea, vomiting, diarrhea, loss of appetite	Encourage acidic fruit juices, particularly cranberry juice.	Give with milk to reduce stomach upset, alert the individual that urine color will be dark brown.
nalidixic acid	NegGram ®		Gram positive and gram negative bacteria.	Skin rash, blood dyscrasia, blurred vision		May cause false positive clini test (test for sugar in urine)
phenazopyridine hydrochloride (AZO)	Pyridium ®		Relieves pain associated with urinary tract infection	ringing in ears, nausea, vomiting	Give with food or milk.	Turns urine red or orange.
sulfamethoxazole-trimethoprim	Bactrim ® Septra ®	Tablet & Liquid	Chronic urinary tract infections	sore throat, fever	Take 1 or 2 hrs. before meals for best absorption	Oral suspensions available for people who cannot swallow large pills.

OTHER DRUGS WHICH EFFECT THE URINARY SYSTEM

Urinary tract infections may be painful. Pyridium is an analgesic (reduces pain) and may be combined with various urinary antiseptics or used alone. The prefix **AZO** means that Pyridium has been added, i.e., **AZO** mandelamine. Review Table 5.2 for specific urinary antiseptics. Certain illnesses, and sometimes advancing age, cause the bladder function to become sluggish.

Urecholine ® is an oral medication used to relieve urinary retention. Side effects include:

- Cramping
- Diarrhea
- Headache

Study Self-Test Questions - Lesson 10: Section 5 -- Medications That Affect the Urinary System

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 6. MEDICATIONS THAT AFFECT THE NERVOUS SYSTEM

OBJECTIVES

At completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the nervous system.
2. Given a specific medication classification, list at least three (3) side effects.
3. State responsibilities, other than observation for side effects, when administering medication in these classifications.
4. List three (3) measures other than medications which can be used to calm an individual.
5. Define epilepsy.
6. Describe observations to make when a seizure occurs.
7. List two (2) medications used to treat extra pyramidal symptoms.

The medication classifications which will be discussed in this lesson are:

CENTRAL NERVOUS SYSTEM STIMULANTS - Medications which **increase** central nervous system functions.

Sub-Classifications:

- **AMPHETAMINE & CAFFEINE** - Increase mental and physical activity
- **CHOLINERGIC BLOCKING MEDICATIONS** - Block or stop symptoms associated with Parkinson's disease and side effects of antipsychotic medications
- **CENTRAL NERVOUS SYSTEM DEPRESSANTS** - Medications which **decrease** central nervous system functions
- **SEDATIVE - HYPNOTIC MEDICATIONS** - Induce sleep and calm the body
- **ANALGESIC MEDICATIONS** - Relieve pain
- **NARCOTIC MEDICATIONS** - Relieve severe pain
- **NON-NARCOTIC MEDICATIONS** - Relieve mild-moderate pain

- **ANTI-INFLAMMATORY MEDICATIONS** - Relieve pain due to inflammation
- **ANTIPYRETIC MEDICATIONS** - Reduce body temperature
- **PSYCHOTROPIC MEDICATIONS** - Used to treat a variety of emotional disorders
- **ANTI ANXIETY MEDICATIONS** - Used to treat mild to moderate states of emotional upset
- **ATYPICAL ANTI PSYCHOTIC MEDICATIONS** - Used to treat aggressive and agitated behavior and older **TYPICAL ANTIPSYCHOTIC MEDICATIONS**
- **ANTIDEPRESSANT MEDICATIONS** - Used to relieve depression
- **ANTICONVULSANT OR ANTI EPILEPTIC MEDICATIONS** - Used to control seizures

RELATED INFORMATION

The nervous system controls and coordinates all voluntary and involuntary body activities, even the production of hormones. Sensory receptors of the nervous system, such as the eye and ear, enable us to be aware of our surroundings. Special parts of the nervous system are concerned with maintaining normal day-to-day functions while other parts act during emergency situations and others control voluntary activities.

NERVES:

Many small cells are bunched together to form nerves. Sensory nerves carry sensations to the brain and spinal cord. Feeling is lost when these nerve impulses are interrupted. Motor nerves carry impulses that cause body activity. Paralysis (loss of function) occurs when these nerves are damaged.

For easier understanding, the nervous system can be divided. Remember, though, that **the nervous system is one interwoven system**, and if one part of it is affected, all of it is affected.

THE CENTRAL NERVOUS SYSTEM: The term central nervous system (C.N.S.) refers to the brain and spinal cord.

BRAIN: All mental activities, such as thinking, voluntary movements, interpreting sensations, and emotions are carried out by brain cells. In general, the right side of the brain controls the left side of the body and vice versa.

SPINAL CORD: The spinal cord is a continuation of the brain and it is about 17 inches long, ending just above the small of the back. Nerves extend from the brain and spinal cord throughout the body.

AUTONOMIC NERVOUS SYSTEM (A.N.S.)

The autonomic nervous system is concerned with **involuntary body activities**. It is made up of two parts called the **sympathetic and parasympathetic systems**. The center of control is in the brain stem. Nerve fibers which carry impulses to control the usual functions of heartbeat, digestion, elimination, respiration, and glandular activity are called **parasympathetic**.

The **sympathetic nervous system (SNS)** controls the body's responses to a perceived threat and is responsible for the "**fight or flight**" response. In times of stress or danger, the heart beats faster, the lungs work harder, and certain glands increase their production. Blood pressure is increased as the body prepares for action. These activities are brought about by stimulation of the sympathetic system.

SENSORY RECEPTORS: These are the nerve endings found in the skin, joints, nose, mouth, ears, and eyes. All of these structures help relay information from the environment to the brain.

MEDICATIONS THAT AFFECT THE CENTRAL NERVOUS SYSTEM (C.N.S.)

In general, the medications that act on the C.N.S. may be divided into two groups: those that stimulate and those that depress its functions.

CENTRAL NERVOUS SYSTEM STIMULANTS--Medications which stimulate the C.N.S. These stimulants speed up all body functions; they:

- increase sharpness of sensation and perception
- increase body activity
- increase alertness and concentration
- suppress fatigue and inhibit sleep

C.N.S. stimulants are used for a variety of physical and mental problems. For example, many people start their day with a cup of coffee or tea. Both of these liquids contain caffeine which is a mild C.N.S. stimulant. During the course of a day when one becomes tired, one will have a cup of coffee or tea which "perks" one up. On the other hand, some people who have coffee late at night can't get to sleep.

In addition to caffeine being present in coffee, tea, chocolate and cola sodas, it is available as a medication. The side effects to be aware of include:

- inability to sleep (insomnia)
- restlessness - nervousness
- increased heart rate

Caffeine should be avoided by people who have stomach ulcers because it is irritating to the lining of the stomach.

AMPHETAMINES

The amphetamines are **C.N.S. stimulants**. They have the disadvantage of producing tolerance and medication dependency. Therefore, the dosage must continuously be increased in order to achieve the same effect. The amphetamines stimulate the C.N.S. to increase: **Mental and Motor Activity**

Amphetamines are occasionally used in the treatment of depression, however, more often used to treat hyper kinetic children. This may be confusing to you as you might wonder why a stimulant would be given to someone who is already overactive. It is not known why amphetamines calm some hyper kinetic children, but it is known that with some individuals who are hyper kinetic, amphetamines will calm them down.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING AMPHETAMINES

These medications have many side effects in addition to being habit-forming. They are medications which, when stopped, can cause severe depression. Common side effects are:

- Loss of Appetite
- Dry Mouth
- Fast Heartbeat
- High Blood Pressure
- Restlessness
- Inability to sleep

Amphetamines are also the base of many diet medications. However, because of dependency and side effects, they are not used for weight loss as much as they were in the past.

Review Table 6.1 for common C.N.S. stimulants.

Table 6.1

Central Nervous System Stimulants

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
amphetamine sulfa	Benzedrine ®	Tablet	Narcolepsy disease where people fall asleep throughout the day.	Restlessness, dry mouth, loss of appetite, high blood pressure		
Amphetamine and dextroamphetamine	Adderall ®	"	ADHD		Avoid caffeine drinks, as caffeine will make these medications stronger.	
methylphenidate	Ritalin ® and Concerta®	"	Hyperkinetic children		"	

There will be more discussion of C.N.S. stimulants when we describe psychotropic medications, which are medications used for mental disturbances.

CENTRAL NERVOUS SYSTEM DEPRESSANTS (C.N.S.)

C.N.S. depressants have the opposite effects of the stimulants. They decrease the central nervous system's activity:

- decreases sharpness of sensation and perception of stimuli, lessens or slows body activity
- decreases alertness and concentration
- promotes drowsiness and sleep

There are various sub-classifications of C.N.S. depressants. However, regardless of the sub-classifications, it is important to remember that they work by depressing activity.

SEDATIVE-HYPNOTIC MEDICATIONS

Though these terms are often used interchangeably, there is a difference in them. A hypnotic is a medication **used to provide sleep**, whereas a **sedative quiets and relaxes** a person without producing sleep. However, due to the fact that a person who is relaxed is likely to go to sleep, hypnotics and sedatives will be described together.

There are two major classes of sedative hypnotic medications known as **barbiturates** and **non-barbiturates**. The non-barbiturates were developed in an effort to produce a sedative-hypnotic which did not have adverse effects (e.g., addiction) associated with the barbiturates. So far this goal has not been achieved. In general, both the non-barbiturates and barbiturates produced the same activity.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING SEDATIVES AND HYPNOTICS

The side effects associated with the sedative-hypnotic medications are an extension of their therapeutic action.

- Drowsiness
- Lethargy
- dry mouth
- poor balance

These side effects can be collectively referred to as "**hangover symptoms**." Elderly individuals are particularly sensitive to side effects, especially **loss of memory**.

A major caution with these medications is the possibility of **addiction**. Prolonged use of sedative-hypnotics may result in increased tolerance and physical dependence. Once this develops the medication must be used continuously to avoid the onset of withdrawal symptoms.

When possible it is best for individuals to sleep without sedation. At times you may be able to calm and help an individual relax without medication. Some measures include: providing a quiet environment; glass of warm milk, and reassurance. There are many medication interactions associated with sedative hypnotic agents. They potentiate the actions of other depressant medications, leading to greater C.N.S. depression, low blood pressure and muscle relaxation. Some medication classifications which interact with sedatives and hypnotics are:

Anti-hypertensive

Antihistamines

Tranquilizers

Alcohol

- Alcohol is a **depressant** and should never be used with sedative- hypnotics, as the combination of the two may lead to serious depression of the C.N.S.
- Sedative-hypnotics **reduce** the effectiveness of anticoagulants and oral contraceptives.
- Because of these numerous medication interactions, as with all medications, it is important to let the physician know what medications the individual is taking.

Life threatening side effects may occur and include:

*Slurred Speech

*Tremors

*Depressed Respirations

If you observe any of these side effects, it is very important to notify the physician or nurse and not give the medication until further directed.

Newer hypnotic medications are Ambien ® and Restoril ®.

Table 6.2 describes some common sedatives and hypnotics

TABLE 6.2
SEDATIVE AND HYPNOTIC MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
<u>Barbiturates</u>	Luminal ®	Tablet	Induce and maintain sleep	Drowsiness, dry mouth, lethargy, hang over effect.	Will increase action of anti-hypertensive, antihistamines, tranquilizers, alcohol	<u>Major caution!</u> Medications can become addictive.
phenobarbital (also used as an anticonvulsant)						
pentobarbital	Nembutal ®		"			
amobarbital	Amytal ®			"		
secobarbital	Seconal ®		"			
<u>Non-Barbiturates</u>						
chloral-hydrate	Noctec ®			"		
glutethimide	Doriden ®		"			
flurazepam	Dalmane ®		"			Dalmane ® does not leave individual with hang over effect

Ambien ® (zolpidem) is a hypnotic agent with a chemical structure unrelated to benzodiazepines, barbiturates, or other drugs with known hypnotic properties.

Restoril ® (temazepam) affects chemicals in the brain that may be unbalanced in people with sleep problems

ANALGESIC (C.N.S. DEPRESSANTS)

Pain primarily functions as a protective signal. Pain may warn the individual of imminent danger (fire) or the presence of internal disease (appendicitis, tumors). Relief from pain is desired when the intensity or duration of pain interferes with a person's ability to function in the activities of daily living. **Analgesics are medications which relieve pain.**

There are two major sub-classes of analgesics:

- narcotic (strong analgesics)
- non-narcotic (mild analgesics)

NARCOTIC ANALGESICS

Narcotic analgesics are capable of altering or relieving severe pain and are primarily used to relieve pain of trauma, such as a broken leg, a heart attack, terminal illness and pain associated with surgery.

Narcotics are **controlled substances** and are placed in **Schedule II** of the Controlled Substance Act. You may wish to review the section on Care of Controlled Substances.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING NARCOTICS

Narcotics are derived from opium or synthetic preparation. Morphine sulfate is the strongest narcotic and is an opium preparation. Demerol is synthetic (man-made) and is almost as strong as morphine. Narcotics have some common side effects:

- slow respirations
- nausea
- vomiting
- constipation
- sweating (diaphoresis).

Before these medications are given, **the respiratory rate should be checked for 1 full minute. If respirations are below 12 breaths per minute, the medication should not be given.** If you are observing an individual on narcotics, your responsibility is to check the **RESPIRATORY RATE FREQUENTLY.**

Please see Table 6.3

ABLE 6.3
NARCOTIC ANALGESICS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
morphine sulfate (opium derivative)	Same	Tablet & Injection	Severe pain	Decreased respirations, sweating nausea, vomiting, constipation.- In addition to above dizziness.	Will increase activity of all CNS depressants	Respiration's are checked before giving and while individual is on medication.
meperidine hydrochloride (synthetic)	Demerol ®					In general synthetic preparations have the same side effects but are less severe than opium derivatives. Give with milk or food
oxycodone hydrochloride (synthetic)	Percodan®	Tablet				
pentazocaine hydrochloride (synthetic)	Percocet ®					
codeine sulfate (opium derivative)	Talwin HCL®	Tablet & Injection				Same as morphine
	Same		Analgesic and antitussive-they are part of many cough syrups			Analgesic and antitussive
propoxyphene hydrochloride (synthetic)	Darvon ® Darvocet ®					NOTE: LIMIT ALCOHOL WITH ALL CENTRAL NERVOUS SYSTEM DEPRESSANTS

NON-NARCOTIC ANALGESICS (MILD ANALGESICS)

- Mild Analgesics
 - Antipyretics
 - Anti-Inflammatory
- **Mild analgesics** relieve mild to moderate pain without altering consciousness or mental function. In particular these medications relieve pain associated with inflammation (arthritis and gout) and dull aches (headaches and muscle aches).
 - **Antipyretics** are medications which reduce fever.
 - **Anti-Inflammatory** are medications which reduce pain associated with inflammation.

One medication which can function in all three of these sub-classes is **aspirin (acetylsalicylic acid – ASA)**. Aspirin is one of the most commonly used medications in the world. Salicylate is the base of aspirin and is a common preparation found in other medications.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING MILD ANALGESICS AND ANTIPYRETICS

In low doses these medications relieve pain, aches and fever. However, in order to relieve the severe pain associated with arthritis and gout, the medications are administered in larger doses for longer periods of time. Large dose therapy is more frequently associated with causing side effects.

The three most common side effects are:

- ringing in the ears (tinnitus)
- nausea
- headache

There is always the possibility of an allergic response and if you observe signs of this, you must notify the doctor or nurse as soon as possible.

Salicylate based medications are irritating to the stomach lining and should be administered with milk or after meals which helps decrease stomach irritation.



TABLE 6.4
MILD ANALGESICS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
*acetylsalicylic acid	Aspirin, Empirin® Anacin ®	Tablet, Liquid & suppositories	Analgesic antipyretic, anti-inflammatory	ringing in ears, nausea, vomiting, diarrhea	Give with milk to reduce gastric irritation. Increase effectiveness of anti-coagulants	Should be avoided if individual has gastric problems. Used for individuals who cannot take aspirin
acetaminophen	Tylenol ®		Analgesic, antipyretic	Drowsiness		

ANTI-INFLAMMATORY NON-STEROID MEDICATIONS

Anti-inflammatory medications are used primarily to relieve inflammation of one or more joints which accompanies problems such as arthritis, gout and bursitis.

Review Table 6.5 for specific information on anti-inflammatory medications. As you will note, side effects are similar to the salicylates.

TABLE 6.5
ANTI-INFLAMMATORY AGENTS (NON-STEROID)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
ibuprofen	Motrin ®	Tablet	Rheumatoid arthritis, and Osteoarthritis	gastric upset, nausea, vomiting, constipation and/or diarrhea	Give with meals and milk to reduce gastric upset.	A non-steroid anti-inflammatory
phenylbutazone	Butazolidin ®	"	Arthritis, gout		Avoid antacids with high salt content.	Should not be given to individuals with a history of gastric ulcers.
indomethacin	Indocin ®			As above, plus: dizziness, depression, mental confusion.		

* Motrin ® is also used for pain associated with menstruation.

ANTI-ANXIETY MEDICATIONS (Minor Tranquilizers)

Anxiety, tension, and nervousness are symptoms caused by situations which are interpreted as being threatening or dangerous. These psychological (mental) conflicts can cause physiological (body) changes, such as trembling, sweating, nausea and increased heart rate. Most people, at some time in their lives, have experienced these uncomfortable feelings. When the cause of the conflict is removed, the body returns to a more relaxed state (autonomic nervous system controls this state). However, if for some reason the source of anxiety continues, the individual may develop a **neurosis** which is

defined as an "**accumulation of anxiety and tension.**" Neurosis falls under the term "mental illness", which is a broad title covering a number of emotion disturbances involving changes in personality and behavior. **Psychosis**, defined as a "loss of contact with reality", is also a form of mental illness. In general, psychosis or psychotic state is more severe than a neurosis or a neurotic state.

Psychotropic is a term used to cover a broad range of medications.

Psychotropic medication:

Any medication capable of affecting the mind, emotions, and behavior. These medications are commonly referred to as tranquilizers (**minor and major**) and the two terms are used interchangeably. Psychotropics do not cure emotional disorders, but they do help to relieve anxiety, aggressive behavior, and depression. Once these symptoms are relieved, a person is more receptive to other forms of treatment.

Anti-anxiety medications are used to treat mild to moderate states of emotional upset. These agents are widely used -- sometimes for extended periods of time.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTI-ANXIETY MEDICATIONS

The actions of anti-anxiety medications resemble those of barbiturates but cause less drowsiness and confusion. Some of these medications are also used for their anticonvulsant properties and will be discussed later in this section.

All of these medications can cause mental and physical dependence. Because of this dependence, whenever these medications are discontinued it should be done on a gradual basis in order to prevent withdrawal symptoms.

Side effects which may occur will resemble those of many C.N.S. depressants: drowsiness, dizziness and constipation. In addition to these symptoms, others which may occur include:

- allergic reactions
- nausea/vomiting
- low blood pressure
- slurred speech

Nausea and/or vomiting can be reduced if these medications are given with or after meals.

See Table 6.6 for the more common anti-anxiety medications.

TABLE 6.6
ANTI-ANXIETY MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
chlordiazepoxide hydrochloride	Librium ®	Tablet & Injection	Reduces anxiety and promotes a feeling of relaxation	Drowsiness, fatigue, nausea, constipation, confusion, excitement, slurred speech	Will increase the effectiveness of antihypertensives and all other CNS depressants including analgesics.	All of these medications can cause addiction.
diazepam	Valium ®		Also used for mild depressant and to relax muscles.			Use with caution in individuals with developmental disabilities.
zolam	Xanax ®	Tablet	Anxiety and panic disorders	Confusion tremors agitation	itraconazole ketoconazole	May be habit forming. Use with caution in glaucoma
escitalopram	Lexapro ®	Tablet	Anxiety depression	Headaches, confusion, fatigue constipation	SSRI medications	May cause irregular heart rate

NOTE: THE INDIVIDUAL SHOULD NEVER MIX ALCOHOL WITH THESE MEDICATIONS

ANTI PSYCHOTIC MEDICATIONS (Major Tranquilizers)

Anti- psychotic medications are a class of medicines used to treat psychosis and other mental and emotional conditions. They are used for the treatment of aggressive and agitated behavior. These medications are stronger than the minor tranquilizers so, in addition to some of the common side effects of C.N.S. depressants and mild tranquilizers, there are more severe side effects which may occur. **Typical** (older) antipsychotics and **atypical (newer)** antipsychotic drugs are used in the treatment of psychosis. **Typical** psychotic drugs belong to **first generation** antipsychotic whereas **atypical** psychotic drugs belong to **second generation** antipsychotic. Both of them are used in the treatment of psychiatric conditions.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTI PSYCHOTIC MEDICATIONS

Major tranquilizers are effective across a wide range of dosages. The dosage is usually increased gradually over a period of seven to fourteen days or until symptoms are controlled or side effects occur. Due to the physical and mental dependence on these medications, they should not be stopped abruptly because withdrawal symptoms may occur.

The major **(severe)** side effects which occur are grouped together and called **extra pyramidal symptoms (EPS)**. These symptoms collectively are uncontrollable muscle spasms and can be broken down to: tremors of hands and feet, shuffling walk, body rigidity, and restlessness.

Extra pyramidal symptoms, for the most part, can be stopped by discontinuing the anti-psychotics or if these medications can't be stopped, other medications may be used to treat these symptoms such as Cogentin® or Akineton®.

However, if these symptoms (EPS) are not corrected, the person can progress to **Tardive Dyskinesia** which is a combination of EPS and more severe, irreversible side effects. The most visible sign is around the mouth and jaws. The tongue has a snake like movement, jutting in and out. In addition, there are some internal changes which are life threatening. The liver and circulatory systems are prime areas for destruction. Visible signs of this damage may be:

(1) liver damage - yellow color to the eyes and skin (jaundice), and (2) circulatory damage - blood disorders (dyscrasia).

A **blood dyscrasia** is either abnormal blood cell formation or absence of adequate production. The initial signs of a blood dyscrasia resemble those of a common cold: a tired, aching feeling, sore throat, fever and swollen glands in the neck.

If these signs appear and are due to a blood dyscrasia, the person needs immediate medical attention. Fortunately, most people who are on long-term anti-psychotic medications also have blood tests done on a regular basis. This helps to monitor any early liver and blood destruction which may be occurring.

Individuals taking anti-psychotics develop a sensitivity to sunlight. As much as possible, these people should avoid excessive exposure to sunlight and be encouraged to use a good sunscreen.

Table 6.7 will supply you with additional information on specific anti-psychotics.

TABLE 6.7
ANTI PSYCHOTIC MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
Older First Generation Typical Antipsychotics						
chlorpromazine	Thorazine®	Tablets, liquids & suppositories	Restoration of emotional calm, relief of severe anxiety, agitation, and psychotic behavior.	Drowsiness, allergic reaction, dry mouth, constipation, and low blood pressure.	Will increase effectiveness of CNS depressants.	May cause photo sensitivity (change in vision) and skin sensitivity to the sun, encourage individual to use sunglasses and sunscreen.
fluphenazine	Prolixin®	Tablet, Injection, Liquid	Psychotic disorders	EPS, TD, overactive reflexes, slurred speech, dizziness	Alcohol, apple juice,	Frequent tests to check kidney and liver function.
haloperidol	Haldol®	Tablet, Injection	Psychotic disorders Tourette's Disorder	EPS, TD, Neuroleptic Malignant Syndrome, Blood Dyscrasia		Increased Mortality in Elderly Patients with Dementia-Related Psychosis
Atypical Antipsychotics						
aripiprazole	Abilify®	Tablets	Psychosis, Depression, Autism	Weight gain, anxiety, blurred vision, N&V, TD, EPS, Insomnia, Hyperglycemia, dizziness, drooling	Alcohol	May increase suicidal thoughts in teens and young adults
risperidone	Risperdal®	Liquid, Tablets	Psychosis, Bipolar Disorder, Irritability in Autism, Depression	Gynecomastia, weight gain, TD, EPS, hyperglycemia	Alcohol	Avoid temperature extremes

ANTI DEPRESSANTS

Mental depression is a common disturbance that affects most people at one time or another. During depression there are noticeable changes in mood and behavior, along with feelings of frustration and hopelessness. **Decreased appetite** and **insomnia** are also common symptoms of depression. The depressed individual appears unable to cope with demands or stresses of living. In severe depression, the thought of suicide may be an acceptable solution. Early recognition and treatment is essential for prevention of the serious consequences of depression. **There are three (3) major types of depression.**

REACTIVE DEPRESSION

Caused by external factors (death, divorce, illness, change of environment and unemployment). This type of depression is time limited and may not require medication.

INTERNAL DEPRESSION

It is difficult to determine the cause of this depression. It may be intermittent or constant. Internal depression almost **always requires medication.**

MANIC DEPRESSION

Individual has alternating periods of elation and depression and is almost always treated with a specific medication called Lithium. (See next page)

Several different types of medications are available and they are generally referred to as antidepressants or mood elevators. However, they have an interesting action in that they may stimulate or depress the central nervous system. Therefore, they relieve depression and also relieve anxiety.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIDEPRESSANTS

There are many different types of drugs used in the treatment of depression, including **selective serotonin reuptake inhibitors (SSRIs)**, **atypical antidepressants**, **tricyclic antidepressants (TCAs)**, and **monoamine oxidase inhibitors (MAOIs)**. The SSRIs (selective serotonin reuptake inhibitors) are the most commonly prescribed class of antidepressants. They act on a chemical in the brain called serotonin. The SSRIs include drugs such as Prozac ®, Zoloft ®, and Paxil ®.

The **SSRIs** are preferred over older classes of antidepressants such as tricyclic antidepressants and MAOIs because their adverse effects are less severe.

Common side effects of SSRIs include:

- Nausea
- Insomnia
- Dizziness
- Weight gain or loss
- Tremors
- Sweating
- Anxiety and restlessness
- Decreased sex drive
- Drowsiness or fatigue
- Dry mouth
- Diarrhea or constipation
- Headaches

Review Table 6.8 for additional information on SSRI Antidepressant Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
fluoxetine	Prozac®	Tablets Capsules	Major depression, OCD, bulimia, panic disorder	insomnia strange dreams; tremors or shaking, feeling anxious or nervous	Thioridazine, MAOIs, other antidepressants, blood thinners	Sometimes used in combination with olanzapine (Zyprexa)® for Bipolar Disorder. May cause suicidal thoughts
sertraline	Zoloft®	Tablets	Panic Disorders, Obsessive Compulsive Disorder, PTSD, Premenstrual dysphoric disorder	Drowsiness, dizziness, tired feeling, insomnia, weight gain	Any other antidepressant, cimetidine, phenytoin, St. John's wort	May cause suicidal thoughts in young adults
paroxetine	Paxil®	Tablets Capsules				

MONAMINE OXIDASE INHIBITORS (MAOI ANTIDEPRESSANTS)

These medications are **not as common** as the tricyclic antidepressants. However, under rare circumstances you may have to administer one of these medications.

Some significant points to remember with these medications are the Food/Medication Interactions. **Foods rich in tyramine** (wine, cheese, beer and canned fish) are restricted. Consuming these foods may cause extremely high blood pressure.

LITHIUM (Anti-Manic Drug)

Lithium is a drug which is used to treat people who have been diagnosed as having a particular mental disturbance known as manic-depressive behaviors. Lithium is highly individualized and there will be specific directions to follow when administering this medication. Also, individuals who take Lithium need to have routine blood tests, which helps the physician monitor the dosage of Lithium. Avoid situations of severe sweating if taking this drug. May result in toxicity. It is important to maintain adequate salt intake and fluid intake.

EPILEPSY & ANTICONVULSANT MEDICATIONS

Epilepsy means a tendency to have recurrent seizures. The seizures are not always accompanied by convulsions, but most do involve a temporary interruption of consciousness. The seizures reflect a sudden unruly pattern of brain waves which is manifested in several ways. An individual with epilepsy may always have the same type of seizure or he may experience a variety of types. An aura or warning is experienced by about 50% of individuals with epilepsy.

The **aura** is an ill-defined sensation experienced through one of the following senses:

- Sight changes - seeing spots in front of one's eyes or a blinding light
- Taste - especially a bitter taste in the mouth.
- Hearing - hearing a strange noise.
- Smelling - smelling a distinctive odor.

There are three (3) major types of epilepsy. They are:

1. Generalized Tonic-Clonic (grand mal)

- a. aura
- b. loss of consciousness
- c. "tonic" phase - spasm of muscles
- d. "clonic" phase - alternate contraction and relaxation of muscles
- e. individual sometimes voids involuntarily during convulsion
- f. individual has no recollection of attack
- g. often followed by headache and exhaustion and frequently sleeps for several hours.

2. Generalized Absence (petit mal)

- a. brief interruption of consciousness
- b. sometimes accompanied by twitching of head, eyes or hand
- c. sometimes seizures are so brief that they go unnoticed
- d. more common among children than adults

3. Complex-partial (temporal lobe or psychomotor)

- a. autonomic, purposeless movements that may seem voluntary
- b. perceptual distortion, e.g., hallucinations
- c. emotional experience, e.g., sudden intense fear or elation
- d. memory distortions
- e. may show stereotyped behavior that is inappropriate for the situation
- f. individual is not aware of his action--will not remember them

The names in parenthesis had been in use for many years until new understanding brought about new terminology. It will be helpful for you to be familiar with both names, as people tend to use both the old and new names.

CARE OF INDIVIDUAL DURING A GENERALIZED SEIZURE:

When an individual has a **TONIC CLONIC** seizure, the biggest danger faced is injury during the fall or during the clonic phase of the seizure. It is your job to protect them from injury and call 911 **if necessary**. Call 911 if a seizure lasts for 5 minutes or longer, the person has an injury during a seizure, or for recurrent seizures one after the other (status epilepticus).

Care during a generalized tonic/clonic seizure:

- **Loosen any restrictive clothing such as ties, belts, unbutton tight collars**
- **Do not attempt to restrict movements. This can cause injury to the person**
- **Turn the person on their side to keep the airway open.**
- **NEVER put anything in the person's mouth**
- **Remain with the person until you are sure they are safe.**

OBSERVATIONS TO REPORT AND RECORD

- If there was an aura
- If there was a loss of consciousness
- If there was a fall and if so in what direction
- Describe the parts of the body that were involved (were there convulsions and whole body involved) tonic/clonic movements
- Describe eye movements e.g., open, closed staring, blinking, rolled back or to the side
- If there were breathing problems and if the person turned blue
- If there were any injuries
- Describe the person's condition following the seizure

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTICONVULSANTS

The anticonvulsant agents are used for the control of chronic seizures, involuntary muscle spasms or movements characteristic of certain neurological diseases. They are most frequently used in the treatment of epilepsy. Therapeutic agents cannot cure these convulsive disorders, but are used to control seizures without impairing the normal functions of the C.N.S.

Since there are many types of epilepsy, some medications are designed to control all types, while others are more individualized. Barbiturates and tranquilizers are effective anticonvulsants and may be used alone or in conjunction with other anticonvulsants. **Valium®** may be used as it is an effective muscle relaxer.

Anticonvulsant therapy begins with a small dose of medication which is then increased until either the seizures disappear or medication toxicity occurs. If one medication decreases the frequency of seizures, but does not completely prevent them, a second medication may be added. For example, phenobarbital, a barbiturate, is sometimes given with Dilantin ® (phenytoin-anticonvulsant). When you administer anticonvulsants, your responsibilities include observing for possible side effects:

- increased hair growth
- dizziness
- skin rash
- gastric distress
- gum overgrowth (gum hyperplasia)
- visual disturbances

The increased hair growth is most visible on the upper lip and about the face in the female individual. This is not a harmful side effect and there is little that can be done to prevent it. However, good oral hygiene will help prevent gum overgrowth and subsequent dental problems. Gastric distress can be minimized by **giving large amounts of fluid or giving the medication after a meal.**

Table 6.9 list some common anticonvulsants you may use in your agency.

Table 6.9
Anticonvulsants/Antiepileptic Medications

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
carbamazepine	Tegretol®	Tablets, capsules suspension	Seizures, nerve pain such as trigeminal neuralgia and diabetic neuropathy	Hyponatremia, dizziness, ataxia, blurred vision	Other anti-convulsants, zanax, trazodone,	May cause serious blood problems, bleeding, life threatening skin rash
lamotrigine	Lamictal ®	Tablets chewable and disintegrating	All types of seizures, Bipolar Disorder		Other anti-convulsants, Oral contraceptives	May cause serious skin rash Steven –Johnson Syndrome
phenytoin	Dilantin ®	Capsules	Seizure Disorder	Gum overgrowth, gastric upset, fever, headache		Good oral hygiene will help prevent gum overgrowth
valproic acid	Depakene ®	Tablets, Capsules	Seizure Disorder	Nausea, vomiting, constipation or diarrhea	Antihistamines, alcohol will increase dizziness	May cause severe liver damage
gabapentin	Neurontin ®	Gelatin Capsules	Partial Onset Seizures	Somnolence, dizziness	Opioids, Maalox®	Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS), also known as multiorgan hypersensitivity
ethosuximide	Zarontin ®	Liquid, Capsules	Seizure Disorder	Nausea, gastric upset gum overgrowth	Acetaminophen, Darvon, Alcohol	Blood dyscrasias
clonazepam	Klonopin ®	Tablets	Seizures/Panic Disorder	Chills, cough, dizziness Fever, Unsteady gait	Ambien, Adderall, Abilify, Alcohol	Some people may have suicidal thoughts

Other anti-epileptic medications that are currently used are:

- Valium ® (diazepam) and Diastat ® (administered rectally)
- Depakote ® (divalproex)
- Zarontin ® (ethosuximide)
- Neurontin ® (gabapentin)

MEDICATIONS BY CLASSIFICATION

A. Anti- anxiety drugs (minor tranquilizers)

1. **Action**--relieve anxiety and tension
2. **Uses**--central nervous system depressant, skeletal muscle relaxant, anticonvulsant
3. **Examples**
 - a. chlordiazepoxide HCl (Librium ®)
 - b. clorazepate dipotassium (Tranzene ®)
 - c. diazepam (Valium ®)
 - d. lorazepam (Ativan ®)
4. **Adverse effects**
 - a. Hypotension
 - b. Slurred speech
 - c. Tachycardia
 - d. Impaired reflexes
 - e. Loss of mental activity
 - f. Drowsiness
5. **Special considerations**
 - a. Possibility of abuse or addiction occurring
 - b. Warning individual to avoid combining drug with alcohol or other depressants

B. Antidepressants

Selective Serotonin Reuptake Inhibitors (SSRIs)

1. **Action**- reduce symptoms of depressive disorders by correcting chemical imbalances of neurotransmitters in the brain.
2. **Uses** - depression, generalized anxiety disorder, agitation, obsessive compulsive Disorder (OCD) and Bipolar Disorder
3. **Examples:**
 - a. fluoxetine (Prozac ®)
 - b. sertraline (Zoloft ®)
 - c. paroxetine (Paxil ®)
4. **Adverse Effects**
 - Nausea
 - Dry mouth
 - Insomnia
 - Diarrhea
 - Nervousness, agitation or restlessness
 - Dizziness
 - Sexual problems, such as reduced sexual desire or (erectile dysfunction)
 - Headache
 - Blurred vision
 - Drowsiness
5. **Special considerations** - In some cases, children, teenagers and young adults under 25 may have an increase in suicidal thoughts or behavior when taking

antidepressants, especially in the first few weeks after starting or when the dose is changed.

Tricyclic Antidepressants

1. **Action**--increase the neurotransmitters norepinephrine or serotonin
2. Use--treat depression
3. **Examples**
 - a. amitriptyline HCL (Elavil ®)
 - b. doxepin HCl (Sinequan ®)
 - c. imipramine HCl (Tofranil ®)
4. **Adverse effects**
 - Orthostatic hypotension
 - Constipation
 - Dry mouth
 - Blood disorders
 - Tinnitus
 - Confusion
 - Nightmares
 - Hallucinations
 - Restlessness
 - Increased risk of suicide
5. **Special consideration**--drug must be given for one to four weeks before an effect is noticed.

Monoamine Oxidase Inhibitors (MAOI)

1. **Action**--decrease the amount of norepinephrine destroyed by metabolism and permits the level to increase in the brain
2. Use--treat depression
3. **Examples**
 - a. phenelzine sulfate (Nardil ®)
 - b. isocarboxazid (Marplan ®)
 - c. tranylcypromine sulfate (Parnate ®)
4. **Adverse effects**
 - Heart irregularities
 - Diarrhea
 - Sweating
 - Constipation
 - Muscle Tremors
5. **Special consideration**--to prevent a hypertensive crisis when taking MAOI inhibitors, avoid foods that contain high amounts of tyramine, such as cheese, fish, liver, baked potatoes, yogurt, beer, wine.

C. Typical Antipsychotics (major tranquilizers)

1. **Action**--blocks the neurotransmitter dopamine or affects the metabolism of serotonin
2. **Uses**--control nausea and vomiting, agitation in organic brain syndrome, symptoms of psychoses

3. **Examples**
 - a. chlorpromazine (Thorazine ®)
 - b. haloperidol (Haldol ®)
 - c. thiothixene (Navane ®)
4. **Adverse effects**
 - a. Abnormal movement of the tongue
 - b. Involuntary muscle contractions that cause bizarre, uncontrolled movements of the face, neck, tongue, and back.
 - c. Akinesia
 - d. Akathisia
 - e. Dyskinesia
 - f. Tardive dyskinesia
 - g. Urinary retention
 - h. Respiratory distress
 - i. Hypo/hyperglycemia
 - j. Hypotension
5. **Special considerations**
 - a. The most effective way to treat adverse effects (especially tardive dyskinesia) is to prevent it from occurring.
 - b. Do not combine tranquilizers with alcohol.
 - c. Some adverse effects are irreversible and life threatening, individuals on strong tranquilizers should be watched closely.

ATYPICAL ANTIPSYCHOTICS

1. **Action** - blocks receptors in the brain's dopamine pathways
2. **Uses**- Schizophrenia, Bipolar Disorder, Autism, Major Depressive Disorders
3. **Examples**
 - a. (olanzapine) Zyprexa ®
 - b. (risperidone) Risperdal ®
 - c. (aripiprazole) Abilify ®
 - d. (quetiapine) Seroquel ®
4. **Adverse Effects** - Although atypical antipsychotics are thought to be safer than typical antipsychotics, they still have severe side effects, including tardive dyskinesia, neuroleptic malignant syndrome, and increased risk of stroke, sudden cardiac death, blood clots, and diabetes. Significant weight gain may also occur.

D. Anti-Manics

1. **Action**--alters chemical transmitters in the central nervous system
2. **Use**--prevent mood swings of manic-depressive illness
3. **Example**--lithium carbonate (Carbolith ®, Lithotabs ®)
4. **Adverse effects**
 - a. Tremors
 - b. Thirst
 - c. Drowsiness

ADDITIONAL INFORMATION CONCERNING PSYCHOTHERAPEUTIC DRUGS

- A. Encourage the individual to drink fluids.
- B. Provide for the individual's safety.
- C. Observe the individual for tremors, convulsions, or insomnia.

- D. Provide the individual with a calm environment.
- E. Help reorient the individual as needed.
- F. Chart and report accurately:
 - 1. Recent memory loss
 - 2. Abrupt changes in mood
 - 3. Changes in speech patterns
 - 4. Insomnia
- G. Therapeutic response to the medication may take several weeks.
- H. Can become sensitive to the sun.

ADDITIONAL INFORMATION CONCERNING COMMONLY ORDERED MEDICATIONS

- A. chlordiazepoxide (Librium ®)--mild tranquilizer
 - 1. **Action**--thought to produce calming effect by enhancing action of one of the nerve transmitters
 - 2. **Use**--provide short-term relief of mild anxiety
 - 3. **Adult dosage**
 - 4. **Adverse effects**
 - a. Expected--drowsiness, lethargy, unsteadiness
 - b. Unexpected--allergic reactions (skin rash), dizziness, fainting, blurred vision, double vision, slurred speech, sweating, nausea
 - 5. **Special considerations**
 - a. Should not be discontinued abruptly if taken continuously for more than four weeks
 - b. If taken in conjunction with some over the counter drugs that contain antihistamines (allergy and cold preparations and sleep aids), can cause excessive sedation in some individuals.
- B. diazepam (Valium ®)
 - 1. **Action**--suppresses the spread of seizure activity and depresses the central nervous system
 - 2. **Uses**--provide short-term relief of mild to moderate anxiety, relieve symptoms of withdrawal, relieve skeletal muscle spasm, and provides short-term control of certain types of seizures
 - 3. **Adverse effects**--allergic reactions, dizziness, faintness, blurred vision, double vision, slurred speech, sweating, nausea, menstrual irregularity
 - 4. **Special considerations**
 - a. Do not discontinue drug abruptly if taken continuously for more than four weeks; dosage should be tapered off gradually.
 - b. Combining diazepam with some over-the-counter drugs containing antihistamines (allergy and cold preparations, sleeping aids) can cause excessive sedation in some individuals.
 - c. This drug can produce psychological and/or physical dependence if used in large doses for an extended period of time.

C. amitriptyline (Elavil ®)

1. **Action**--slowly restores to normal levels certain constituents of brain tissue that transmit nerve impulses
2. **Use**--relieve symptoms associated with depression
3. **Adverse effects**--allergic reactions, swelling of face or tongue, headache, dizziness, fainting, tremors, peculiar taste in mouth, irritation of tongue or mouth, nausea, indigestion, breast enlargement, milk formation, swelling of testicles
4. **Special considerations**
 - a. Psychological or physical dependence is rare and unexpected.
 - b. Discontinue this drug gradually; abrupt withdrawal after long-term use can cause headaches, nausea and malaise.

D. haloperidol (Haldol ®)--strong tranquilizer

1. **Action**--not completely known but thought that this drug interferes with the action of dopamine as a nerve transmitter in the brain and thereby reduces anxiety and agitation and improves coherence and thinking
2. **Uses**--control acute psychosis of unknown nature, treat hyperactivity in children, may be used to control Tourette's Syndrome.
3. **Adverse effects**
 - a. Expected--mild drowsiness, low blood pressure, blurred vision, dry mouth, constipation, Parkinson-like reactions
 - b. Unexpected--allergic reactions (skin rash, hives), dizziness, weakness, agitation, insomnia, loss of appetite, indigestion, nausea, vomiting, diarrhea, urinary retention
5. **Special considerations**
 - a. Use smallest dose that is effective for long-term treatment.
 - b. Use with caution in epilepsy (can alter pattern of seizures).

E. chlorpromazine (Thorazine ®)--strong tranquilizer

1. **Action**--not completely known, though to act to correct an imbalance of nerve impulse transmissions
2. **Use**--treat agitated depression and states of mental dysfunction
3. **Adverse effect**
 - a. Expected--drowsiness, blurred vision, dry mouth, nasal congestion, constipation, impaired urination, discoloration of urine (pink or purple--not significant)
 - b. Unexpected--allergic reactions (skin rash, hives, low grade fever), increased appetite and weight gain, weakness, agitation, insomnia, impaired vision, chronic constipation
4. **Special considerations**
 - a. Many over-the-counter drugs react unfavorably with this drug, consult physician.
 - b. Obtain prompt evaluation of any changes or disturbances in vision.

Answer Self-Test Questions--Lesson 10: Section 6--Medications That Affect the Nervous System

LESSON 10: MEDICATION CLASSIFICATION

SECTION 7. MEDICATIONS THAT AFFECT THE ENDOCRINE SYSTEM

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the endocrine system.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities, other than observation for side effects, when administering medications for specific classifications.
4. Describe the difference between insulin shock and diabetic coma and your responsibilities for each.

The medication classifications which will be discussed in this lesson are:

- **INSULIN** - Medication by injection, used to treat diabetes mellitus.
- **ORAL HYPOGLYCEMICS** - Oral medications used to treat diabetes mellitus.
- **STEROIDS** - Medications used to decrease inflammation.
- **ORAL CONTRACEPTIVES** - Medications used to prevent pregnancy (birth control) and relieve problems associated with menstruation.

RELATED INFORMATION

Endocrine glands produce chemicals called hormones which enter the bloodstream directly and are quickly carried to all parts of the body. The hormones regulate and control body activities and growth. There are seven endocrine glands, some of which are in pairs.

There is a wide variety of medications which affect the endocrine system. The medications are prepared to duplicate the actions of hormones or to interfere with the hormonal activity. People who have some type of hormonal deficiency may require medication therapy. For example, the child who is born with a deficiency of growth hormones (produced by pituitary) may stay small in stature unless the hormone is replaced.

Medications which duplicate hormone activity may also be given to treat various body disorders. For example, a person who has arthritis may benefit from medications called steroids. The actions of steroids resemble actions of the hormone, cortisone, which is produced by the pituitary gland.

The following chart (7.1) presents a brief description of some of the gland's activity specific medications, therapeutic use and side effects.

Gland Activity
Chart 7.1

Gland	Hormone Action	Medications	Therapeutic Use	Side Effects
Thyroid	Stimulates the metabolism. Lowers calcium and phosphates	Prophylthiouracil ® Tapazole ®	Over active thyroid (Hyperthyroidism)	Weight loss, overactivity
		Thyroid ® Synthroid ®	Underactive thyroid, (hypothyroidism)	Weight gain, underactivity
Parathyroids	Regulates blood calcium level	Calcitonin ® Calcium salts	Muscle weakness	Headache, poor appetite, thirst
Testes	Development of sexual maturity	Testosterone	Immature sexual development, cancer in females.	When given to females may cause masculinization

DIABETES MELLITUS

Diabetes is a **metabolic** disease (condition that interferes with the use of nutrients after digestion). About twenty nine million people in this country are known diabetics. One out of four people are not aware they are diabetic. Eighty-six million people are pre-diabetic.

Diabetes is a condition characterized by the body's inability to efficiently burn carbohydrates (starches and sugars). If the body does not burn carbohydrates, it is deprived of the energy needed to lead an active life.

In order for the body to burn sugar for energy, insulin must be present. Insulin is a substance which is produced by specialized cells in the pancreas called **the Islets of Langerhans**.

Insulin promotes five (5) bodily functions:

- 1) Transports sugar into cells
- 2) Controls the rate of sugar used for energy
- 3) Stores sugar in the body for use later
- 4) Assists with storage of fat
- 5) Stimulates protein tissue growth

When a person does not manufacture enough insulin, they will have symptoms of diabetes. The symptoms may be so gradual that the person may not realize anything is wrong. Occasionally, especially in children, the onset is dramatic. At one extreme the individual may complain of being chronically tired; at the other, the first sign may be a diabetic coma.

Common symptoms of diabetes:

- **Increased Urination***
- **Increased Thirst***
- Feeling very hungry - even though you are eating
- Extreme fatigue
- Blurry vision
- Cuts/bruises that are slow to heal
- Weight loss - even though you are eating more (type 1)
- Tingling, pain, or numbness in the hands/feet (type 2)

*** The most common symptoms are increased thirst and urine output.**

ORAL HYPOGLYCEMICS

Oral hypoglycemics are medications which resemble insulin activity. They are used primarily for adult onset diabetes (Type II). The reactions discussed in relation to insulin therapy are rare with oral hypoglycemics. However, the possibility of reactions does exist and one must always be alert for signs of shock or coma.

Side effects of oral hypoglycemics may include, stomach upset, itching, and hives. As with any side effects, they should be reported and documented.

**TABLE 7.2
ORAL HYPOGLYCEMICS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Interactions Food/Drug	Comments
metformin	Glucophage®	Tablets Oral solution	Type II Diabetes/ weight loss	Nausea, vomiting flatulence, headache lack of energy	furosemide, alcohol, steroids Tagamet®	May cause pancreatitis and impair B12 absorption
	Glimpiride ®	Tablets	Type II Diabetes	Hypoglycemia, Headache, nausea	Cymbalta, Crestor diuretics	Do not take if sensitive to other Sulfa meds
Pioglitazone	Actos®	Tablets	Type II Diabetes	Headache, muscle pain, Cold symptoms	Insulin and other oral Hypoglycemic	May increase risk of bladder cancer

Individuals who take insulin or oral hypoglycemics should be instructed that these medications do not cure diabetes mellitus, they only control it. Diabetics should follow a prescribed diet, control their weight, be followed by a physician, and have a form of identification stating they are a diabetic such as a Medical Alert bracelet or necklace.

COMPARISON OF DIABETIC COMA AND INSULIN SHOCK

INSULIN SHOCK (Hypoglycemic reaction)

Causes:	too much insulin too little food excessive exercise vomiting
Onset:	Sudden, within minutes
Signs:	Skin pale, moist, weak, hungry, nervousness, dizziness, headache, visual changes, alterations in consciousness, fainting, seizures, coma (late stages)
Blood Sugar :	Low, body lacks sugar
First aid:	Treat for shock, orange juice, sugar by mouth*, candy under tongue

DIABETIC COMA (Hyperglycemic reaction)

Causes:	too little insulin too much food illness-increased demand on body
Onset:	slow, hours to develop
Signs:	Skin warm, flushed, dry, eyeball soft (appear sunken), respirations deep, rapid- (Kussmaul Respirations) fruity odor to breath, nausea, vomiting, abdominal pain alteration in level of consciousness, lethargic, coma (late stages)
Blood Sugar:	High, too much sugar
First aid:	immediate transfer to hospital

***Never give anything by mouth unless individual is awake and able to swallow.**

STEROIDS

The adrenal glands secrete the hormones which control inflammation. When irritation or inflammation is present anywhere in the body, there is an increase in the production of these hormones. If the inflammation is very severe, the adrenals may be unable to secrete an adequate supply to control the inflammation. Additional hormones, called **steroids**, may be needed when a person has rheumatoid arthritis, bursitis, allergic reactions and other problems. Steroids will not cure the problem, but merely suppress the symptoms. Upon stopping the medication, the symptoms may once again appear. Steroids are used to treat a wide variety of disease processes and do not necessarily affect only the endocrine system.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING STEROIDS

Steroids decrease inflammation and the body's resistance to infection. Therefore, one of your responsibilities is to be alert to signs of infection. Steroids should not be given to individuals with stomach ulcers, tuberculosis or other severe infections. If such a condition exist, contact nurse. When administering steroids, responsibilities include:

- Observe for signs of infection
- Administer steroid with milk or food
- Report any signs of stomach distress
- Give medication on time

There are a number of possible side effects if the individual is on steroids for a long period of time. Some side effects are:

- Puffy face "moon face"
- Changes in mood
- Muscular weakness
- Easy bruising of skin
- Abnormal hair growth
- Acne

Steroids tend to hold salt and water in the body. Therefore, the "moon face" may be a sign of fluid retention. This medication should not be stopped abruptly but dosage should be tapered. Check with nurse immediately should the individual refuse medication.

TABLE 7.3
ANTI-INFLAMMATORY MEDICATIONS
(Steroids)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
cortisone acetate	Cordone acetate ®	ointment	arthritis, Bursitis, Skin Conditions, Acne, Muscle weakness	mood changes, abnormal hair growth	high in salt.	medications cause gastric distress. Antacids are sometimes ordered to be given. Also give these medications after meals and with milk. NEVER STOP MEDICATION ABRUPTLY.
hydrocortisone	Cortef ® Cortril ®			"		
prednisone	Deltason ® Meticorten ®		Delayed wound healing			
methyl-prednisolone	Medrol ®	Tablet	Hypertension, Peptic Ulcer			
triamcinolone	Aristocort ® Kenacort ®	Tablet & ointment				

BIRTH CONTROL MEDICATION

There are many different preparations available and each one has specific directions for use. When administering the medication, a major responsibility is to **read the label for directions**. Dangerous side effects to be alerted to are:

Abdominal Pain
Chest Pain
Headache
Eye Problems
Severe Leg Pain

A-C-H-E-S

The word **ACHES** will help you remember these symptoms as each symptom begins with the letters used to spell "aches".

Review Table 7.4 for additional information on birth control pills.

TABLE 7.4
BIRTH CONTROL MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interaction	Comments
mestranol	Ortho-Novum®	Tablet	Inhibit ovulation by suppressing Estrogen secretion	Approximately 40% of women on These meds have side effects: nausea, vomiting, weight gain, breast fullness, irregular menstruation, depression, vaginitis	Oral contraceptives effectiveness may be diminished when these medications are used: Dilantin Mysolin, INH, PCN Sulfonamides Oral contraceptives decrease effectiveness of: Anticoagulants, Anticonvulsants, Antihypertensives	Oral contraceptives should not be used if a person has: Cardiovascular Problems, cancer Liver Problems Pregnancy Hypertension Diabetes Gall Bladder Disease Over age 35 Asthma Seizure Disorder Depression Blood Disorders
medroxyprogesterone acetate	Depo-Provera	Injection	Inhibits ovulation	Nausea, bloating diarrhea, vomiting distention , fluid retention	Alcohol, seizure meds St. John's Wart, sleep meds, HIV meds	

There are numerous types of birth control medications. Always follow the doctor's orders. Individuals may also receive injections of Depo Provera every three months.

Answer Self-Test Question - Lesson 10: Section 7-- Medications That Affect the Endocrine System

LESSON 10 - SECTION 8
MEDICATION CLASSIFICATION
MEDICATIONS THAT AFFECT THE GASTROINTESTINAL SYSTEM

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the gastrointestinal System.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities, other than observation for side effects, when administering medications in these classifications.
4. List three (3) common causes of constipation.

The medication classifications which will be discussed in this Section are

- **ANTACIDS** - Medications which are used to neutralize excess stomach acid.
- **EMETICS** - Medications used to cause vomiting.
- **ANTI EMETICS** - Medications which relieve nausea and vomiting.
- **CATHARTICS** - Medications used to relieve constipation.
- **ANTIDIARREHEALS** - Medications used to stop diarrhea.

PROTON PUMP INHIBITORS AND H₂ RECEPTOR ANTAGONISTS are two additional medications we will discuss. **They are used in the treatment of Gastroesophageal Reflux Disease (GERD) and ulcers.**

The gastrointestinal system is also called the G.I or digestive tract. It extends from the mouth to the anus and is lined with mucous membrane. The organs of this system change food into simple forms able to pass through the walls of the small intestine into the circulatory system. The circulatory system carries the nutrients to the body. The non-digestible portions of what we eat are moved along the intestines until they are finally excreted from the body as feces. Many organs contribute to the digestive process.

ANTACIDS-- medications used to neutralize excess stomach acid. Hydrochloric acid produced in the stomach is necessary for proper digestion. Ordinarily the stomach lining is resistant to breakdown, but under certain conditions (e.g., excessive or prolonged

secretion of hydrochloric acid during period of worry or stress) a small area of the lining may break down and form a stomach ulcer. Antacids can be used to prevent ulcer formation as well as to treat ulcers and common indigestion referred to as heartburn. Excessive and frequent heartburn may be an indication that the person has **Gastro Esophageal Reflux Disease (GERD)**.

Signs and symptoms of excess stomach acid include:

- burning in stomach
- burping
- upset stomach

As you may recall, many medications are irritating to the stomach and the doctor may order an antacid to help reduce stomach irritation. However, it is important to note that antacids may also decrease the absorption of a medication which may change the medication's effectiveness. Do not give water after medication is administered.

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTACIDS

These medications are available in liquid or tablet form. Liquid preparations are generally more effective.

Side effects are minimal, but constipation and/or diarrhea has occurred when antacids are used over an extended period. Responsibilities include giving the medications on time and in proper relationship to meals.

Table 8.1 list specific antacids.

TABLE 8.1
ANTACIDS
(Non-prescription medications)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
aluminum hydroxide	Amphojel®	Tablet & Liquid	Treatment and/or prevention of gastric ulcers.	Rare, but may cause constipation	Given between or before meals.	Should only be used when prescribed by a physician.
aluminum hydroxide & magnesium trisilicate	Gelusil®		Also used for indigestion	"	Antacids may interfere with absorption of other medication.	Tablet preparations are to be chewed.
aluminum magnesium hydroxide	Maalox®			"	Many antacids contain salt. Individuals on low salt diets should only use low salt antacids.	

Proton Pump Inhibitors (PPIs)

These medications reduce the production of stomach acid. They are used to treat gastroesophageal reflux disease (GERD) and ulcers.

See table 8.2 below for commonly prescribed PPIs

TABLE 8.2
Proton Pump Inhibitors

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
esomeprazole	Nexium ®	Capsule Tablet	Treatment of GERD and gastric ulcers.	Headache, diarrhea, constipation, flatulence, pain	Warfarin, Iron preparations	May be linked to kidney failure. May increase your risk of bone fracture in the hip, wrist, or spine.
pantoprazole	Protonix ®	Tablet Injection, .I.V.	"	"		
hydroxide omeprazole	Prilosec ®	Tablet Capsule		"		

H2 Receptors Antagonist

These medications inhibit histamine at the H2 receptors which leads to a reduction in the secretion of stomach acid. They are used to treat gastric ulcers, gastroesophageal reflux disease (GERD) and gastritis. See table below 8.3

TABLE 8.3

H2 Receptor Antagonist

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
ranitidine	Zantac ®	Tablet, Effervescent Tablet, Granules Injection	"	"	Alcohol	May increase risk of developing pneumonia
hydroxide omeprazole	Prilosec ®	Tablet, Capsule		"		

EMETICS

Emetics are used to cause vomiting and are used primarily as a first aid measure when prompt emptying of the stomach is essential, as with accidental poisoning.

The use of emetics should be avoided in cases of corrosive poisoning since tissue damage of the mouth and throat is increased by the second passage of material over these structures. Most cleaning agents are corrosive and have directions if accidental swallowing happens.

One medication which can be used is **Syrup of Ipecac**. This medication works quickly. Directions for dosage are on the label and should be read very carefully. Many people with children keep Ipecac on hand for emergencies. Contact Poison Control Center, based on agency policy, should you suspect poisoning before any action is taken.

ANTI EMETICS

These medications relieve nausea and vomiting. Numerous preparations have been used, but ordinarily the most effective treatment must be chosen with due respect to the cause of nausea. Some medications previously discussed in the respiratory and nervous system sections may be used as anti-emetics.

Some antihistamines, such as Phenergan and Dramamine are also used as anti-emetics.

Compazine which is a mild tranquilizer is also used as an anti-emetic. In general, side effects of anti-emetics are:

- drowsiness
- dry mouth

Nausea and vomiting may also be treated with **household remedies, such as coca cola and warm tea.**

CATHARTICS AND LAXATIVES

Cathartics and laxatives are used interchangeably. **Laxatives are milder, cathartics stronger.** These medications are used in treatment of constipation, which is the condition that occurs when fecal material remains too long in the large intestine. The feces becomes hard and causes distention in the lower bowel.

Constipation usually results from one or more of the following causes:

- improper diet
- poor fluid intake
- tension and worry
- lack of exercise

In most cases, the correction of one or more of these simple health rules will take care of the constipation problem. In other cases, however, cathartics may be ordered. It is important to remember that there is no set time limit between bowel movements.

CAUTION AND/OR RESPONSIBILITIES WHEN ADMINISTERING CATHARTICS AND LAXATIVES

These medications should never be given if an individual is complaining of abdominal pain, nausea or vomiting. These signs could indicate more serious problems than constipation, such as appendicitis.

Cathartics and laxatives may cause the following side effects:

- abdominal cramps
- nausea
- abdominal pain

Review Table 8.2 on cathartics and laxatives.

TABLE 8.2
CATHARTICS & LAXATIVES
(All are non-prescription medications)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
dioctyl sodium	Dialose® Colace®	Tablet	Constipation	Rare, with over use could cause diarrhea	May interfere with adequate nutrition.	Takes 8-10 hours to work.
dioctyl calcium	Surfax®				When individuals are taking any CNS depressants, they may also be ordered to take Dialose or Colace which reduces constipation due to depressants.	
psyllium hydrophilic bisacodyl	Metamucil® Ducolax®	Granules Tablets & Suppositories		Abdominal cramps		Suppositories work faster than tablets.

ANTIDIARRHEALS

Antidiarrheals are used to treat diarrhea, which is a symptom of a disorder of the bowel associated with rapid passage of feces.

Some causes of diarrhea are:

- contaminated or partially digested food; intestinal infection
- nervous disorder
- circulatory disturbances
- certain allergic disorders

In view of these numerous causes, the treatment of diarrhea varies greatly. In some cases, a cathartic that brings about emptying the entire contents of the bowel may be the means to relieve diarrhea because it removes the irritating material.

Simple diarrhea is most frequently due to:

- poor eating habits
- emotional stress

CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIDIARRHEALS

The best situation is to try and prevent or rectify the cause of diarrhea. However, medications treatment may be necessary. Most of the antidiarrheals are relatively non-toxic to organs other than the intestines because they are not absorbed into the general circulation. The most frequent side effect produced by antidiarrheal medications is constipation.

Antidiarrheals should not be administered for more than a few days. Many of these medications are non-prescription.

Review Table 8.3.

TABLE 8.3
ANTIDIARRHEAL AGENTS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
diphenoxylate	Lomotil ®	Tablet & liquids	Treat diarrhea	Fatigue, Vertigo	Increases action of CNS depressants.	If over used may cause constipation.
bismuth subsalicylate	Pepto-Bismol®	Liquids				
kaolin & pectin	Kaopectate® Par-gel		"			
kaolin, pectin, mixtures	Donnagel ®				"	

Answer Self-Test Questions - Lesson 10: Section 8 -- Medications that Affect the Gastrointestinal System

LESSON 10: MEDICATION CLASSIFICATIONS

SECTION 9

MEDICATIONS THAT AFFECT THE SKIN AND MUCOUS MEMBRANES

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the skin and mucous membranes.
2. Given a specific medication classification, list at least one (1) side effect.
3. State responsibilities when administering various topical medications.

RELATED INFORMATION

The skin tells us much about the general health of the body. A fever may be indicated by unusual redness or flushing of the skin. Pallor (less color than normal) is a sign associated with many conditions. The oxygen content of the blood can be noted quickly by the color of the skin. When the oxygen content is very low, the blood is darker and the skin appears bluish (cyanotic).

STRUCTURE AND FUNCTION

The skin is one of the most important organs in the body. The integumentary system includes the skin and accessory structures, the hair, nails, nerves, and the sweat and oil glands. The top layer is constantly being washed or worn away as it is renewed from the lower layer.

MUCOUS MEMBRANES

The mucous membranes are continuous with the skin and line all body openings. The mucous membranes secrete mucous, which tends to cover the surface of the membranes, protecting them from foreign bodies and waste materials.

Medications applied to the skin serve many functions and may be intended either for a local effect or for a general effect following absorption through the skin and/or mucous membrane. Medications absorb rapidly across the mucous membrane.

The medications may conveniently be divided into the following classifications. Medication described in each classification are available without a prescription.

EMOLLIENTS

Oily substance applied to soothe the skin or mucous membranes. The oily layer protects the skin from irritants and makes the skin softer due to penetration of the emollient into the surface layer. Some commonly used emollients are **Vaseline ®**, **various lotions**, and **cold creams**.

DEMULCENTS. These protective agents are used primarily to alleviate irritation, particularly of mucous membranes. They are generally applied to the surface in a thick (viscid) preparation. Demulcents may be incorporated in lozenges to soothe oral and throat mucous membranes. A common demulcent base is **glycerin** which is found in many external lotions and is a base in some cough syrups and drops.

ASTRINGENTS. Astringents are medications which have a tendency to lessen secretions and stop minor bleeding. They shrink swollen and inflamed tissues. **Witch Hazel** and **rubbing alcohol** are two common astringents and are used as a base in many skin preparations.

COUNTER IRRITANTS. Counter irritants are medications which are used to irritate unbroken skin areas in order to relieve pain in deeper tissues. Common examples are **Ben-Gay ®**, and **Oil of Wintergreen**.

ANTIPRURITICS. Antipruritics are agents that relieve itching. Various preparations are used, but the cause of itching determines the medication to be used. For example, the itching caused by poison ivy can be relieved by **Calamine Lotion ®**.

LOCAL ANESTHETICS. Agents which numb a specific area. Many ointments contain local anesthetics and are applied topically for minor conditions, such as: sunburn, insect bites, as well as for more serious conditions, such as burns and hemorrhoids. Some examples are: **Surfacaine ®**, **Benzocaine ®** and **Nupercaine ®**.

ANTISEPTICS. Agents that destroy or prevent the growth of bacteria on the skin. Some antiseptics may be used to treat a skin infection and/or prevent an infection from occurring.

CAUTION AND/OR RESPONSIBILITIES WHEN APPLYING SKIN PREPARATIONS

Most skin preparations can be obtained without a prescription, but this does not negate the seriousness of these preparations. **Always read the labels for directions**. The major caution is that they are external medications and should never be taken internally. Most of the labels will include directions in case of accidental swallowing. In addition, you should be aware of the poison control number in your area.

Chart 9.1

ANTISEPTICS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/ Medication Interactions	Comments
bacitracin	Bacitracin ®	Antibiotic ointment	Infections of the skin	Rare, may include skin rash, redness and pruritus		Should never be taken by mouth.
gentamicin	Garamycin®	"	"	"		
benzoin tincture	Benzoin®	Ointment & Liquid	Promotes healing			
boric acid	Boric Acid	Ointment, solution & powder	Skin antiseptic			May be used to irrigate eyes
hydrogen peroxide	Hydrogen Peroxide	Solution	Skin antiseptic			
iodine tincture	Iodine	Solution	Skin antiseptic			
providone-iodine	Betadine ®	Ointment & concentrate Liquid soap	Skin antiseptic			Ointment will stain clothes
phisoderm	Phisoderm		Skin antiseptic			

Answer Self-Test Questions - Lesson 10: Section 9 -- Medications that Affect the Skin and Mucous Membranes

LESSON 10 SECTION 10
MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE EYE AND EAR

OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the eyes.
2. Define the classifications of medications which affect the ears
3. Discuss procedure for administering eye drops.
4. Describe procedure for administering ear drops to an adult.

THE EYE

A number of medications are instilled in the eye via ointments and drops. There are also some medications used to irrigate the eyes in case of infection.

Proparacaine (Ophthaine ®) is used for relief of pain. It is available in eye drops only.

Miotics are a group of medications which constrict the pupil. Miotics are used in the treatment of glaucoma (common eye problem in the elderly). Most miotics are administered as eye drops.

- neostigmine oromide Prostigmin ® eye drops
- carbachol Doryl ® eye drops
- physostigmine Eserine ® eye drops & tablets

OPHTHALMIC OINTMENTS

Many of the antibiotics are prepared as ophthalmic ointments. e.g., Bacitracin ®, Aureomycin® and Neosporin. ®

The major responsibilities are to be sure you are administering the drops to the designated eye and maintain clean techniques (washing your hands before and after administering any medication).

OS = Left Eye OD = Right Eye OU = Both Eyes

- A. To instill ointment, pull down the lower eyelid as the individual looks upward.
Squeeze the ointment **into** the lower eyelid. Avoid touching the tube to the eye or lid.

- B. The individual should tilt face upward to receive an eye drop. Use an absorbent tissue to prevent excess drops and tears from flowing down the individual's face.

Procedure for Instilling Eye Drops and Ointments

1. Wash your hands and/or have the individual wash their hands.
2. Place the individual's head on a suitable support, such as a pillow. Direct his face toward the ceiling.
3. Instruct the individual to fix his gaze on a point above his head.
4. If secretions are present, remove them by gently wiping the eyelid from the inner corner to the outer corner.
5. Apply gentle traction to the lid lashes at the bony rim of the eye; do not apply pressure to the eyeball.
6. Approach the eye from below with the dropper or ointment tube, outside of the individual's field of vision; do not touch the eye with the dropper or tube.
7. **FOR EYE DROPS:** Always warm drops to room temperature. (You may warm drops by holding bottle between your hands and rolling bottle back and forth) Always hold the dropper with the tip straight down. Release the prescribed number of drops into the **conjunctival sac**; do not allow drops to fall more than 1 inch. Avoid letting the drops fall onto the eyeball as this is painful.

Apply gentle pressure inward and downward against the bones of the nose for about 2 minutes. This prevents the medication from entering the lacrimal (tear) duct and being absorbed through the nasal cavity.

Discard any drops left in a dropper.

If the dropper touches the eye, wash it with soap and water

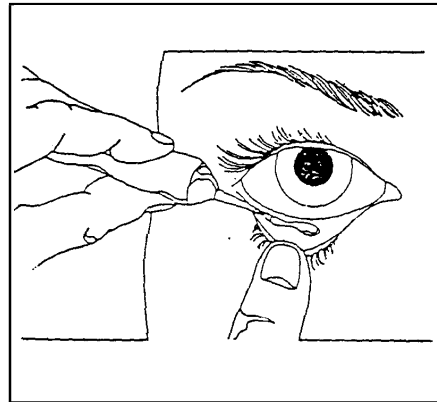


FOR EYE OINTMENT: Squeeze a small amount of medication along the **INSIDE** of the lower eyelid. Instruct the individual to keep eye closed for 1 - 2 minutes to allow the medicine to spread and be absorbed.

8. Wash hands.

9. Record on the medication record.

*Ointments are applied from **INNER** to **OUTER** canthus



THE EAR

Just as the eye is sensitive to light, the ear is sensitive to sound. The ear has three parts: the outer ear, the middle ear and the inner ear.

Since it is impossible to reach the inner ear due to the eardrum, conditions such as **otitis media** (infection in the inner ear) must be treated by oral antibiotics. However, the pain caused by external and middle ear infections may be treated with medications administered as ear drops. **Dibucaine**® has an anesthetic action and is used to relieve ear pain. Some mild oral analgesics may also be ordered.

Nausea and vomiting are associated with problems in the inner ear. As you recall, this area helps us maintain a sense of balance. It is thought that the reason people develop motion sickness is due to a disturbance in the middle ear. Anti-emetics previously discussed, such as **Bonine**® and **Dramamine**® may be used.

The primary responsibilities when working with ear drops are:

- Maintain clean technique.
- Warm ear drops to body temperature.
- Avoid touching the ear with the dropper.

Following the procedure will assure proper installation of ear drops.

Administration of Ear Drops

1. Allow drops to warm to body temperature by holding the bottle in your hand for a few minutes. Hold the bottle yourself it is unsafe for the individual to do so.
2. Have the individual lie on his side with the ear to be treated upward.
3. Shake the medicine, if required, and draw up into the dropper.
4. To allow the drops to run in:
 - a. **Adults** - pull the pinna (earlobe) **back and up** and allow the drops to fall in the external canal.
 - b. **Children** (under the age of 3) - pull the pinna (earlobe) **back and down** and allow the drops to fall in the external canal.
5. Do not insert the dropper into the ear and do not allow the dropper to come into contact with any portion of the ear.
6. Have the individual remain on his side for a few minutes to allow the medication to reach the eardrum.
7. Insert a soft cotton plug if ordered. Never pack the plug tightly into the ear.

Caution: Monitor carefully so that individual does not tamper with cotton in ear.

Child



Adult



Answer Self-Test Questions - Lesson 10: Section 10 -- Medications that Affect the Eye and Ear

CERTIFIED MEDICATION ATTENDANT COURSE

PART II

GLOSSARY

REVISED – 1998
REVISED FEBRUARY – 2018

GLOSSARY

A

Abdominal distention--Enlarged abdomen.

Absorption--The taking up of fluids or other substances by the skin, mucous surfaces, or absorbent vessels.

Acetylcholine--Chemical present in many organs and tissues of the body that has important physiological functions, i.e., transmission of a nerve impulse across a synapse - neurotransmitter.

Acne--A disorder of the hair follicles and oil-producing glands of the skin.

Adverse effect--Side effect of a medication; undesirable reaction.

Affective psychosis--Psychotic reaction in which a person exhibits wide swings in emotional feelings.

AIDS--Acquired Immune Deficiency Syndrome is a disease that affects the body's ability to fight infection. AIDS is spread through the body fluids of an infected person by sexual intercourse (vaginal, anal, oral), sharing IV needles, infected mothers passing the disease to the fetus, transfusion of blood or blood products.

Akathisia--Motor restlessness-inability to sit or lie down quietly. Continuous movement of the hands, mouth, picking at self, rocking in a chair, and drumming fingers, pacing the floor, rocking when standing.

Akinesia--Fatigue and weakness of the arms and legs. Apathetic, disinclined to initiate or to expend energy to complete a task.

Alcohol--Any beverage that contains ethyl alcohol (ethanol), the intoxicating sedative-hypnotic in fermented and distilled liquors. A CNS depressant, depending on the amount consumed, alcohol acts as an analgesic, tranquilizer, sedative-hypnotic, soporific, intoxicant, anesthetic, or narcotic.

Allergen--A substance that causes a hypersensitive reaction (an allergy).

Allergic effect--Sensitivity to any substance contacted by touch, inhalation, ingestion, or injections such as poison ivy, pollen, insect bites, foods, or medications; causes sneezing, itching, swelling, difficulty in breathing.

Anaphylactic reaction--Life-threatening allergic reaction caused by an allergen. Characterized by respiratory problems, fainting, itching, and welts on the skin.

Androgens--Male hormones.

Anemia--A condition in which the blood is deficient either in quantity or in quality.

Anesthetics--Medications that cause a loss of sensation.

Angina--Any disease in which spasmodic and painful suffocation or spasms occur.

Anorexia--Lack or loss of appetite for foods.

Antacid--Given to neutralize excessive acid in stomach. (Example: Maalox).

Antagonistic effect--An agent, such as a remedy or a drug, which tends to nullify the action of another agent.

Anthelmintic--Given to kill worms in gastrointestinal tract. (Example: Povan).

Antianxiety drugs--Minor tranquilizers, also used for prevention and treatment of convulsions.

Antiasthmatic and Bronchodilator--Given for asthma and lung congestion (example: Tedral, Isuprel)

Antibiotics--Substances produced by certain fungi, bacteria, and other organisms that are effective in inhibiting the growth of or destroying microorganisms--e.g. penicillin.

Antibiotic and Antibacterial--Given to control infections (example: Penicillin).

Anticonvulsants--Medications used to stop or prevent convulsions or seizures.

Antidepressants--Alleviate the symptoms of depression.

Antidiabetic agent--Given for treatment of diabetes (example: Metformin).

Antidiarrheal preparation--Given to control diarrhea (Example: Kaopectate, Paregoric).

Antiemetic--Drugs used to treat and prevent nausea and vomiting.

Antihistamines--Drugs that are used to reduce the effects associated with histamine production in allergies and colds.

Anti-inflammatory--Medications used to reduce swelling, pain, and tenderness caused by inflammation.

Atherosclerosis--A deposit or degenerative accumulation of cholesterol and lipid material in the arteries.

Antipsychotics--Major tranquilizers, used to control symptoms of psychoses and organic brain syndrome; can change behavior but does not cure disease.

Antipyretic--Given to lower a temperature that is above normal (example: Aspirin, Tylenol).

Antiseptic--A substance that inhibits the growth of germs. Antiseptic solutions are used as cleaning agents to prevent the spread of infection.

Antitussives--Medications that relieve coughing.

Anuria--No urinary output.

Anxiety neurosis--Frequent feeling of uneasiness or fear with no apparent cause - associated with somatic symptoms and without organic disease.

Apathetic--Lack of concern or caring.

Aphasia--Defect or loss of the power of expression (speech, writing, or signs), or of comprehending spoken or written language, due to injury or disease of the brain centers.

Arrhythmia--A change in the time or force of the rhythm of the heartbeat.

Arteriosclerosis--Thickening and hardening of arterial walls caused by calcium build-up that interferes with blood circulation.

Arthritis--Inflammation of a joint.

Aseptic--Free of infection. Often refers to proper handwashing and other measures taken to prevent the spread of infection.

Aspiration--The taking of foreign matter (such as food) into the lungs during the respiratory cycle.

Assault and battery--The threat to use force upon another person and the carrying out of the threat.

Asthma--A chronic respiratory disease, often from allergies, and accompanied by labored breathing, chest constriction, and coughing.

Athlete's foot--A contagious fungus infection of the feet.

Atomizer--A device used to deliver a fine spray of medicine.

Atypical Antipsychotic - also known as second generation antipsychotics (SGAs)) are a group of **antipsychotic drugs** (antipsychotic drugs in general are also known as major tranquilizers).

Auditory canal--Tubular passages or ducts that assist in hearing or in the sense of hearing.

Autonomic Nervous System (ANS)--The division of the vertebrate nervous system that regulates involuntary action (intestines, heart, and glands) and makes up the sympathetic and parasympathetic nervous systems.

B

Blood pressure--The force exerted by the heart against the arterial walls when the heart contracts (systolic) or relaxes (diastolic).

Bradycardia--Slowness of the heartbeat; less than 50 beats per minute.

Back sinus--An air cavity in one of the cranial bones that connects with the nose.

Bronchitis--Inflammation or swelling of the bronchial tubes.

Bruise--Black and blue area caused by an injury to the surface of the skin.

Buccal--Medication is placed between the teeth and the mucous membrane of the cheek.

Bulbourethral glands--Small structures about halfway between the bladder and the end of the penis that secrete sperm protectant.

Burns--Injury to the skin by strong chemicals, electricity, high temperatures, or radiation.

Bursitis--Inflammation of a bursa, usually at the shoulder, elbow, or knee joints.

C

Caffeine--A white, bitter, crystalline substance that has stimulant effects and constricts blood vessels in the brain.

Caffeinism--Excessive ingestion of large amounts of caffeine, usually in coffee or tea, for prolonged periods.

Capsules--Medication in small cylinder-like containers.

Carbohydrates--Sugars, starches, and cellulose.

Cardiotonics--Medications used to strengthen the activities of the heart.

Cataracts--The lens or capsule of the eye loses its transparency or translucency causing partial or total blindness.

Chills--Shivering or shaking.

Chronic kidney failure--Reduction in kidney function.

Chronic Obstructive Lung Disease (COLD)--Chronic airway obstruction.

Cirrhosis--Chronic liver damage caused by previous disease.

Cocaine--From the coca plant, a short-acting but very powerful stimulant. Heavy usage can lead to "paranoid syndrome" in which the user is highly suspicious or nervous.

Code of Ethics--A voluntary set of rules that influence relationships between people.

Comatose--Cannot be aroused; unconsciousness.

Common cold--Communicable viral disease.

Competent--Well-qualified or capable.

Conjunctival sac--Mucous membrane that lines the inner surface of the lower eyelid.

Conjunctivitis--Inflammation of the mucus membrane that lines the inner surface of the eyelid and the exposed surface of the eyeball.

Constipation--Difficult, incomplete or infrequent bowel movements.

Contaminated--When something is impure or dirty, when it has germs or bacteria on it that may cause disease or infection.

Contracture--Permanent shortening of a muscle that produces a deformity.

Convulsions--Abnormal, uncontrolled movement of all parts of the body.

Creams--Medication applied to the skin or mucous membrane that is more easily absorbed by the skin than ointments.

Cumulative dose--If the body does not use all of drug does the drug may remain in the body and build up with each new dose; when the drug builds up it can lead to harmful and dangerous side effects that must be watched for. To help prevent this the resident should be given many liquids to drink. Also the regularity of bowel movements should be checked; if the person is constipated the drug may not be passing out the body like it should.

Cumulative effect--Build-up of medication in the body due to slow excretion that could lead to a toxic effect.

Cyanosis--A bluish discoloration of the skin caused by the lack of oxygen in the blood.

Cystitis--Inflammation of the urinary bladder.

D

Daydream--A dreamlike musing or fantasy while awake.

Decubitus ulcer--An open wound that is caused by the pressure of lying or sitting in one position for a long period of time. Also called a pressure sore or bedsore.

Dehydration--Excessive loss of water from the body.

Depressants--Medications used to decrease mental and physical activity.

Depression--A lowering or decrease of activity functioning with the following symptoms: lack of interest in life, insomnia, loss of appetite due to inability to cope with one's life.

Dermis--A layer of skin.

Desired effects--The normal effect of a drug; the reason for which the drug was given.

Diabetes--A disorder of carbohydrates, protein, and fat metabolism that prevents the body from properly converting foods into energy for carrying out vital functions.

Diarrhea--Frequent, loose bowel movements.

Disinfectant--Substance used to destroy microorganisms.

Diuretic--Given to rid the body of excess fluid by urination (Example: Diuril, Dyazide).

Dopamine--Chemical present in many parts of the body that has important physiological functions, i.e., transmission of a nerve impulse across of synapse - neurotransmitter. Dopamine is a product of norepinephrine.

Drug interaction--The action of one medication interferes with the action of another; the effects of two or more medications.

Duodenum--The first portion of the small intestine.

Duty of Care--Performance of services that meet common standards.

Dyskinesia--Abnormal movements of the body such as a dramatic onset of spasms, oculogyric crisis (begins with a stare, rolling of eyes, tilting of head, facial expressions), protrusion of the tongue, stiff neck, inability to swallow, stammering speech (dysarthria), labored breathing, and involuntary muscle movements.

Dyspepsia--Indigestion.

Dysphagia--Difficulty in swallowing.

Dyspnea--Difficulty in breathing.

Dysuria--Painful or difficult urination.

E

Eczema--A noncontagious inflammation of the skin, marked mainly by redness, itching, and the outbreak of lesions that discharge fluid and become encrusted and scaly.

Edema--Swelling caused by large amounts of fluid in the tissues.

Emaciated--Thin, underweight.

Emesis--Vomiting.

Emphysema--A condition of the lungs resulting in labored breathing and increased susceptibility to infection.

Enema--Used to cleanse the lower bowel, relieve constipation; some types relieve gas or act as an emollient (soothing irritated tissues of the colon), and administer medication.

Epidermis--The outer protective layer of the skin.

Epididymis--Coiled structure that stores and matures sperm cells.

Epilepsy--Chronic disorder characterized by recurring seizures that last from a few seconds to several minutes and require specific medication for prevention and control.

Estrogen--Female hormones.

Excoriation--A scratch on the skin, usually covered with a scab.

Excretion--Eliminating waste, such as sweat, urine, or feces from the body.

Expectorant--Medication that assists in liquefying the mucus to make it easier to cough up.

Extrapyramidal--Outside of the pyramidal tracts.

F

Fecal impaction--A collection of 'putty-like' or hardened feces in the rectum.

Feces--Waste excreted from the bowels

Fever--Body temperature above normal.

Fibrillation--Very rapid irregular contractions of the muscle fibers of the heart resulting in the heartbeat and the pulse not beating simultaneously.

Flushing--Redness of the skin.

Flutter--Very rapid rhythmic contractions of the heart muscles.

Fracture--Broken bone.

Friction--The rubbing of one thing against another. For example, when you wash your hands aseptically you create friction by rubbing them together in a brisk, back-and-forth motion.

G

Gallbladder--Sac in which the bile from the liver is stored.

General effects or Systemic effects--Caused by drugs that circulate in the bloodstream through the entire system and effect the whole body.

Generic--Commonly available drugs that are not protected by trademark.

H

H₂ antagonists-- also called **H₂ blockers**, are a class of medications that block the action of histamine at the histamine H₂ receptors of the parietal cells in the stomach. This decreases the production of stomach acid. They are used to treat peptic ulcer disease and gastroesophageal reflux disease.

Hematemesis--Vomiting blood.

Hemiplegia--Paralysis on only one side of the body.

Hepatitis--Inflammation of the liver.

Histamine--A white crystalline compound found in plant and animal tissue. It is a stimulator of gastric secretion, and is used medicinally as a vasodilator to increase the blood supply to the brain.

Hives--Red, swollen, itchy areas.

Hormone--A chemical substance secreted into the body fluids by an endocrine gland, which has a specific effect on the activities of other organs.

Hyperglycemia--An abnormally high level of sugar in the blood.

Hypertension--High blood pressure.

Hypnotics--Medications used to produce sleep.

Hypoglycemia--An abnormally low level of sugar in the blood.

Hypokalemia--An abnormally low level of potassium in the blood.

Hypotension--Low blood pressure.

I

Idiosyncrasy--Unusual or unexpected effects from a medication.

Immunity--Resistance of the body to a particular disease.

Incident report--Written account of an error in documentation or medication administration, injury to an individual, or injury to a staff member or visitor.

Incontinence--Loss of bladder and/or bowel control.

Infection--Activity of disease-producing bacteria, virus, or fungus in the body and the reaction of the body to the microorganisms and their products.

Infectious hepatitis--Contagious infection of the liver.

Inflammation--Localized heat, redness, swelling, and pain as a result of irritation, injury, or infection.

Influenza--An acute highly contagious infection. Flu.

Inhalation--To draw in by breathing.

Inhaler--A device used to administer medication by the act of breathing in.

Initial or Attack Dose of Medication--This is the first main dose of a drug given to the person; this dose may be larger than the ones that follow it.

Inner canthus--The corner of the eyelid closest to the nose.

Insertion--Medication is placed into a specific area of the body, usually with the fingers.

Insomnia--Inability to sleep.

Instillation--The process of administering a liquid - usually drop by drop.

Insulin--A preparation derived from the pancreas of the pig, ox, or developed from semi-synthetic human insulin that is used in the medical treatment of diabetes.

Iron deficiency anemia--Low iron levels in the blood due to inadequate diet or blood loss.

Ischemia--Temporary decrease in the amount of blood being delivered to a part of the body; mainly due to the contraction of the blood vessel.

J

Jaundice--Yellowish discoloration of tissues and body fluids with bile pigment caused by any of several pathological conditions in which normal processing of bile is interrupted.

K

Ketoacidosis--Result of fat being used for energy resulting in an acidotic state. Form of acidosis in which sodium, potassium, and ketone bodies are lost in the urine; found in individuals who have diabetes mellitus.

L

Labia--Folds of skin or mucus membrane that surround the vagina.

Laceration--A wound made by tearing.

Laxative--Given to cause a bowel movement (example: Ex-Lax®).

Senokot®).

Lethargic--Not alert, drifts off into sleep, drowsy, sluggish.

Libel--Any written statement that damages a person's character.

Liniment--A solution used as a vehicle to distribute medication.

Liver--organ of the body that secretes bile and causes changes in many of the substances in the blood.

Local action--Medication acting at the site of administration, on the skin or mucous membrane.

Lotions--Watery preparations that contain medication; are to be patted on, not rubbed in.

M

Maintenance dose of medication--The doses following the initial dose.

Malpractice--Improper, injurious or negligent professional treatment or care of an individual.

Marijuana--The dried leaves and flowering tops of the pistillate hemp plant that yield THC and is usually smoked.

Medical asepsis--Cleaning measures taken to prevent the spread of infection in a doctor's office, hospital, or long-term care agency.

Medication--Any substance used in the diagnosis or treatment of disease or the relief of pain or other symptoms.

Medicine dropper--A small glass or plastic tube usually capped by a hollow rubber bulb at one end that is used for measuring and administering medication.

Metabolism--The physical and chemical processes involved in the maintenance of life.

Miotics--An agent that causes contraction of the pupil of the eye.

Mons pubis--Soft fatty tissue covering the joint of the pubic bones.

Mood stabilizers--Used to stabilize mood swings (elation or depression).

Mucous membrane--The inner lining of the mouth and labia minora.

Muscle relaxant--Medication that helps muscle tissue relax and be less tense and painful.

Muscle spasm--Condition of the muscles in which there is a sudden and violent tightening of the muscle.

Muscle strain--Condition in which the muscle is stretched.

Mydriatics--A drug that produces dilation of the pupils.

N

Nausea--Feeling the need to vomit.

Negligence--Omission or neglect of any reasonable precaution, care, or action.

Neuron--A nerve cell.

Neurotransmitters--Chemical substances that assist an electrical nerve impulse to travel across the synapse.

Nonsteroidal anti-inflammatory agents (NSAIA)--Medications used to reduce symptoms of inflammation.

Norepinephrine--Chemical present in the adrenal glands.

O

Obese--Extremely overweight.

Ointment--Mixtures of medications with a fatty base, soft enough to spread at room temperature or melt at body temperature.

Oliguria--Secretion of a diminished amount of urine in relation to the fluid intake.

Ophthalmic medication--Medication that is used exclusively in the eyes.

Oral--By mouth.

Oral-hypoglycemics--Stimulate specialized cells in the pancreas to produce insulin.

Orthopnea--Inability to breathe except in an upright position.

Osteoporosis--Abnormal porousness of the bone caused by the enlargement of its canals or the formation of abnormal spaces. Causes brittleness.

Otic Preparation--Any medication placed in the ears, usually to clean the ear or to treat ear infections (example: Cortisporin Otic Drops)

Outer canthus--The outer corner of the eyelid.

P

Pallor--Paleness of the skin.

Pancreas--A large gland that secretes digestive enzymes and the hormone insulin.

Paranoia--Slower, progressive psychosis characterized by suspicions or ambition and delusions of persecution or of grandeur.

Paraplegia--Paralysis of the legs and lower part of the body; caused by disease or injury to the spine.

Parenteral--Introducing medication or food into the body by injection.

Parkinsonism--Varying degrees of loss of associated movements--rigidity of limbs, tremors, gait and posture disturbances, drooling, and skin changes.

Pediculosis--A contagious infestation of the hair, body, and pubic area caused by lice.

Penis--Cylinder-shaped vascular structure on the outside of the male body. Houses the external portion of the urethra, and is the male organ of copulation.

Perineal--The area between the thighs that includes the anus and vulva in the female and the anus and penis in the male.

Pernicious anemia--Vitamin b₁₂ deficiency.

Perineum--The area between the anus and the posterior part of the external genitalia.

Petechia--A small spot on the body surface caused by a minute hemorrhage.

Phlebitis--Inflammation of a vein.

Phobia--A persistent, illogical, or intense fear of something.

Physical dependency--State in which withdrawal of a drug produces specific symptoms such as muscle cramps, vomiting, or tremors.

Pneumonia--An acute or chronic disease marked by inflammation and infection in the lungs.

Polyuria--Large amounts of urinary output.

Powder--Solid medication that has been ground into fine particles and used in that form.

Primary effect--Reason a medication was ordered.

Prostate--Doughnut-shaped gland, in the male, composed of muscular and glandular tissue that surrounds the urethra at the bladder and adds alkaline substance to sperm.

Proton Pump Inhibitors - a group of drugs whose main action is a pronounced and long-lasting reduction of gastric acid production. Within the class of medications, there is no clear evidence that one agent works better than another. They are the most potent inhibitors of acid secretion available

Psoriasis--A chronic, noncontagious disease characterized by inflammation, reddened lesions, and white scaly patches.

Psychological dependency--An emotional need or craving for a drug.

Psychosis--any severe mental disorder, with or without organic damage, characterized by deterioration of normal intellectual and social functioning and by partial or complete withdrawal from reality.

Psychotropics--Drugs that affect moods.

Pulse--Rhythmical throbbing of the arteries caused by the heartbeat.

Pyelonephritis--Inflammation of both the kidney and the lining of the pelvis.

Pyorrhea--Inflammation of the gum and tooth sockets leading to loosening of the teeth.

R

Range of motion--Moving a joint its full range in an attempt to prevent muscle contractions and joint deformity.

Rash--A skin eruption, usually reddened and raised.

Rationalization--To devise self-satisfying but incorrect reasons for one's behavior.

Reasonable care--Doing only those things that you have been trained to do; acting as others would act in the same or similar situations.

Rectum--The lowest or last, segment of the large intestine that ends at the anus.

Regression--Returning to an earlier less mature behavior pattern.

Respiration--Process of breathing.

Rhinitis--Inflammation and swelling of the lining of the nose.

Rubella--Known as German Measles; an acute infectious disease spread by droplet infection.

S

Scabies--A contagious skin condition caused by mites that burrow under the skin; characterized by tiny, thread-like blisters that itch.

Schizophrenia--Sever emotional disorder, characterized by misinterpretation, retreat from reality, experiences of delirium, hallucination; individual loses ability to tell fact from imagination.

Sclera--White tissue covering all of the eyeball except the cornea.

Scrotum--Sac-like structure, located behind the penis, which holds the testicles.

Secondary effect--Additional effect of the medication besides the one for which it was intended.

Sedative--A drug having a calming effect, relieves anxiety and tension, being replaced by tranquilizer (less likely to cause drowsiness or dependency).

Sediment--Solid particles in the urine.

Seminal vesicles--Pouch-like structures, behind the bladder, which store sperm.

Sensory system--Receives outside sensations and relates these sensations to the proper nerves.

Side effects--Effects other than the effects for which a drug was given. These effects can be normal and expected or they can be abnormal and dangerous. Side effects can range from drowsiness to rashes, swelling, and vomiting.

Sinus--Air cavities in the skull that open into the nasal cavities.

Slander--A malicious statement of report.

Somnolence--Drowsiness, sleepiness.

Sprain--Wrenching of a joint, with partial rupture of its ligaments. More severe than a strain and requires longer recuperation.

Standard of Care--A description of conduct that illustrates what a reasonably prudent person would have done, or would not have done, under similar circumstances.

Sterile--When it has no germs or bacteria on it.

Stimulant--An agent that promotes the activity of a body system of function (example: amphetamines and caffeine).

Strep throat--A severely inflamed and infected throat.

Stress--Circumstances, physical or mental, that cause strain or tension.

Suppositories--a solid medication designed to melt within a body cavity other than the mouth.

Syncope--A brief loss of consciousness.

Systemic action/infection--Affecting the entire body.

T

Tablet--Dried, powdered medication pressed into shape.

Tachycardia--Excessively rapid heartbeat, usually applied to a pulse rate above 100 per minute.

Tardive Dyskinesia--Involuntary, repetitive useless movements such as spasms, oculogyric crisis, protrusion of the tongue, stiff neck, and inability to swallow that occur almost continuously during waking hours but cease during sleep.

Testicles--Also called testes, produces testosterone and sperm cells for reproduction.

Tetanus--Known as Lockjaw; an acute infectious disease often caused by puncture wounds. Often fatal.

Thrombophlebitis--Inflammation of a vein that results in the formation of a clot.

Tic Douloureux--Spasm of a nerve in the face.

Tinnitus--A sound in the ears, such as buzzing, ringing, or whistling.

Tolerance--The ability to withstand the effects of a drug, after single or multiple administrations, without showing adverse effects.

Topical--pertaining to a particular spot; local.

Toxic effect--Effects of medications that become poisonous to the body.

Trade name--The name, given to a manufacturer, by which a medication is known.

Tranquilizers--A drug that produces a calming effect, relieving anxiety and tension.

Transdermal patch--Adhesive bandage containing medication.

Tremor--Involuntary trembling or shaking.

Tuberculosis--Communicable acute or chronic infection caused by mycobacterium tuberculosis.

Turgor--Normal fullness and elasticity of the skin.

U

Universal precautions--Treatment of all blood and bodily fluids as if they were contaminated (blood and bodily fluid isolation), proper disposal of needles.

V

Vagina--The canal leading from the vulva to the uterus in the female.

Vas deferens (ductus deferens)--Tube that carries sperm to the seminal vesicles.

Vasodilators--Drug that increases the blood supply to the brain and other parts of the body.

Vertigo--Dizziness.

Voiding--Eliminating urine.

W

Withdrawal--The physiological readjustment that takes place upon the discontinuation of a medication.

CERTIFIED MEDICATION ATTENDANT COURSE

PART III

SELF-TEST STUDY GUIDES

**REVISED – 1998
REVISED FEBRUARY – 2018**

INTRODUCTION

SELF TEST QUESTIONS

TRUE OR FALSE

- _____ 1. The CMA may only administer those medications ordered by a physician or dentist.
- _____ 2. The CMA may administer medication by Intramuscular, intravenous and subcutaneous routes.
- _____ 3. The CMA may receive and assume responsibility for reducing to writing oral or telephone orders from a physician.
- _____ 4. The CMA should record in the client's chart, doses delivered to and/or administered to client.
- _____ 5. The CMA is responsible to chart dry effects and side effects: obtain vital signs as indicated or ordered.
- _____ 6. The CMA may not administer medication by the oral inhalant route unless administering a pre-measured dosage unit provided by the manufacturer.
- _____ 7. The CMA may deliver pro-re-nata, PRN, as needed, medications when authorized by a licensed physician, dentist or registered nurse. This documentation must be documented in writing within 24 hours.
- _____ 8. The CMA may not alter medication doses as delivered from the pharmacy unless authorized by a physician or dentist.
- _____ 9. The CMA may administer medication in an acute care unit funded or operated by the Louisiana Department of Health and and/or Department of Social Services.

**RESPONSIBILITIES IN THE AREA OF MEDICATION
ADMINISTRATION AND LEGAL MANDATES**

SELF-TEST QUESTIONS - Lesson 1

1. Malpractice is _____

2. Negligence is _____

3. List the six medication "Rights"

4. List three conditions that can cause medication errors.

5. Your signature on a chart means that _____

6. Give four words that describe ethical behavior. _____

7. The **first** things to do if you make an error is _____ and
_____.

8. _____ are medications that produce or sustain either mental or physical dependence.

9. There are many commonly used medications which _____ alike and _____.

BASIC PHARMACOLOGY

SELF TEST QUESTIONS - Lesson 2

1. _____ is the commonly used name for a drug.
2. _____ is the manufacturer's name.
3. Medication Therapy may be defined as the use of substances that _____ and _____ disease.
4. Name the four sources of medication: _____, _____, _____ and _____.
5. Name the three systems of measurement used when ordering medication _____, _____ and _____.
6. Match the following:

a) p.o.	1) 1 cc
b) stat	2) by mouth
c) 1 ml	3) 1 tsp
d) 5 ml	4) immediately
e) 1000 ml	5) 1 quart
f) 30 cc	6) 1 grain
g) 60 mg	7) 1 fluid ounce
7. The only tablets which may be broken are those that are _____.
8. _____ tablets are treated so they can pass through the stomach unchanged and then disintegrate in the intestine.
They must NEVER be _____.

9. Match the following:

- | | |
|--------|---------------------------|
| a) bid | 1) four times a day |
| b) tid | 2) everyday |
| c) qid | 3) every other day |
| d) qd | 4) before meals |
| e) hs | 5) twice a day |
| f) qod | 6) after meals |
| g) ac | 7) three times a day |
| h) pc | 8) at bedtime |
| i) qhs | 9) every night at bedtime |

10. Match the following

- | | |
|-------------|--|
| a) qh | 1) if necessary, one time only |
| b) q2h | 2) every three hours |
| c) q3h | 3) as needed, usually ordered with a certain time interval |
| d) q4h | 4) every hour |
| e) ad lib | 5) every four hours |
| f) s.o.s. | 6) every two hours |
| g) prn | 7) as desired |
| h) gtt | 8) nothing by mouth |
| i) mg | 9) blood pressure |
| j) mcg | 10) milliter |
| k) ml | 11) drop |
| l) NPO, npo | 12) microgram |
| m) gr | 13) milligram |
| n) B/P | 14) grain |
| o) ss | 15) one half |

11. Most drugs are metabolized in the _____.

12. List four factors which may result in a change of dosage of a medication.

FUNDAMENTALS OF MEDICATION THERAPY - SELF-TEST QUESTIONS - Lesson 3

1. The most common routes of administration are _____ and _____.
2. Define Capsule: _____

3. Never _____, _____, or _____ timed released capsules before administration.
4. Define Tablet: _____

5. Suspensions must be _____ before use.
6. Define Suppository: _____

7. Suppositories melt at _____ temperature.
8. Define Lotions: _____

9. Define Desired Effect: _____

10. Define Side effects: _____

11. Side effects may be _____ or _____

12. If medications do not appear to work, the _____ should be notified.
13. Food/Medication interactions can be the same as _____

14. Define Synergistic: _____

15. Define Antagonistic: _____

16. Define Medication Allergy: _____

17. Define Cumulation: _____

18. Define Addictive Effect: _____

19. A medication may be stopped but effects can last _____

PRINCIPLES AND FUNDAMENTALS OF ADMINISTERING MEDICATIONS

SELF TEST QUESTIONS - Lesson 4

1. Describe the RULE OF THREE

2. Chart medications only _____ you have given them.

3. Obtain ordered vital signs _____ administering medications.

4. List three precautions that aid in preventing errors when administering medications:

5. List three precautions that aid in preventing errors when preparing medications.

6. The omission of a medication should be reported to the nurse _____

7. Describe the procedure to follow when an individual refuses medication:

8. State at least four reasons other than refusal when medications might be omitted.
- _____
- _____
- _____
9. Never flush wasted or contaminated controlled substances:
_____ True _____ False
10. Medication must be stored in a _____ cabinet.
11. Topical/external medications must be stored _____ from oral medications.
12. Suppositories are to be stored in _____
- _____
13. Medications stored in the refrigerator must be kept in a _____
14. Labels on medication bottles must always be _____ and _____.
15. When receiving medications from the pharmacy you must _____, check it against the list of medications _____ and _____ them correctly.
16. Never pour medication into your _____.
17. After pouring a liquid medication always _____ the outside of the bottle with a clean wet cloth.
18. The single most important step to take to prevent the spread of infection is _____
- _____
19. Define Universal Precautions:
- _____
- _____
- _____

QUESTIONS - Lesson 4

20. The best means of protection from direct exposure to blood or visibly contaminated body fluids is to wear _____.
21. Gloves shall be _____ and _____ after contact with each client.
22. Scientific evidence indicates that only _____ contact with semen, vaginal secretions, blood, or visibly blood contaminated body fluids carries a potential risk for HIV transmission.

THE MEDICATION CYCLE
A. OBSERVING FOR PHYSICAL AND
BEHAVIOR PROBLEMS AND/OR CHANGES

SELF TEST QUESTIONS - Lesson 5-A

1. The individuals who have the most contact with the clients are:

2. Define:

Objective Symptoms: _____

Subjective Symptoms: _____

3. When observing the individual report _____
to the staff nurse

4. When charting an Axillary temperature add _____ after the reading.

5. When charting the general appearance of the client's skin color, note:

6. When charting the emotional status of an individual, it is always important to
describe in detail his _____.

THE MEDICATION CYCLE
B. REPORTING AND RECORDING PHYSICAL AND
BEHAVIOR PROBLEMS AND/OR CHANGES

SELF TEST QUESTIONS-Lesson 5-B

- 1 List some emergency conditions: _____

2. Get_____, but stay with the individual until _____arrives.
3. Can you think of some non-emergencies? _____

4. If you are in doubt as to whether a situation is an emergency, your best bet is to:_____

5. When should an emergency situation be reported?

THE MEDICATION CYCLE
C. ASSISTING IN VISIT TO THE PHYSICIAN AND PHARMACIST

SELF TEST QUESTIONS-Lesson 5-C

1. List information you need to tell and/or give the physician:

2. List questions you should ask about a medication:

3. Describe Unit Dose: _____

Refer back to Clara Barton, Prescription Label and answer the following questions:

4. Is phenytoin a generic or trade name? _____
5. How many times a day does Clara receive her medication? _____
6. How many capsules does Clara take each time? _____
7. How many capsules will be given per day? _____
8. How many times can the prescription be refilled? _____
9. List some questions you may have to ask the pharmacist about the medication _____

10. List some ways to assure the individual receives medication when out of the residence: _____

THE MEDICATION CYCLE
D. RECORDING AND STORAGE OF MEDICATIONS

Self-Test Questions-Lesson 5-D

1. Drug supplies for each individual must be stored under the proper conditions of: _____, _____, _____
_____ and _____.
2. Bottles must always be _____ when not in use to prevent deterioration of the medicine.
3. List the 3 conditions which must be met before over the counter drugs may be administered:
(1) _____
(2) _____
(3) _____
4. Any drug container having a detached or unreadable label must be:

5. The area in which medications for external use are stored, must be marked:

MEDICATION ADMINISTRATION
SELF-TEST QUESTIONS - Lesson 6

1. List the "Six Rights" of Medication Administration:

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____
- (6) _____

2. Describe procedure to determine right individual:

3. Describe procedure to determine right medication:

4. Describe procedure to determine right dosage:

5. Medications should be administered as _____

6. If a medication is to be administered at 9:00 a.m., it can be given from
_____ to _____

7. Describe procedure to determine right route:

8. Documentation that a medication was given is done: _____administration.
9. List some DO's and DON'Ts of medication administration:

10. The _____ is a record that describes the medications used by the individual, the dose, the route and the times the medication is to be taken.
11. A medication that is given "as needed" is a _____medication.
12. When a medication error occurs you must _____and _____the error.
13. A medication error occurs when any one or more of the _____of medication administration is violated.
14. List examples of violations in medication administration which result in medication errors: _____

15. List four occasions when not to give medications:
(1) _____
(2) _____
(3) _____
(4) _____

DOCUMENTATION

SELF-TEST QUESTIONS - Lesson 7

- T or F 1. Legibility is not very important on the chart.
- T or F 2. You may use white out or liquid paper on the record.
- T or F 3. The date and time of an entry are very important parts of the record.
- T or F 4. Chart what you see, hear, smell, touch and what you think or feel.
5. Every medication given must be charted for the correct individual and include the following information:
1. _____
2. _____
3. _____
6. Name the parts of a medication order.
- _____
- _____
- _____
- _____
7. Routine medications are charted by putting your _____ in the appropriate box on the medication record, and by _____ your complete name and title in the appropriate space.
8. The effects of _____ medications must be charted after an appropriate period of time.
9. If a medication is not charted and legible, it is _____
- _____

INTRODUCTION TO THE USE OF MEDICATION REFERENCES

SELF-TEST QUESTIONS - Lesson 8

1. List three sources of information regarding medications:

2. What information should the CMA have knowledge of prior to administering a medication to an individual?

3. What are two on-line resources for obtaining information about medications?

4. A package brochure must accompany each package of the drug product and be approved by the _____ before the product is released for marketing.

MEDICATION CLASSIFICATIONS - OVERVIEW

SELF-TEST QUESTIONS - Lesson 9

1. Define the term classification: _____
2. Give the **action** of the following classifications:
 - a. antacids _____
 - b. steroids _____
 - c. urinary antiseptics _____
 - d. diuretics _____
3. List two **adverse effects** of the following classifications:
 - a. antidiarrheals _____
 - b. saline laxatives _____
 - c. non-steroidal anti-inflammatory agents _____
 - d. adrenergic blocking agents _____
4. Give the **classification** for each drug:
 - a. Propoxyphene (Darvon) _____
 - b. Nalidixic acid (NegGram) _____
 - c. Furosemide (Lasix) _____
 - d. Magnesium salts (Milk of Magnesia) _____
 - e. Levodopa-carbidopa (Sinemet) _____
 - f. Auralgan _____
 - g. Methyldopa (Aldomet) _____
 - h. Diphenhydramine (Benadryl) _____
 - i. Folic Acid _____
 - j. Kenalog _____
 - k. Indomethacin (Indocin) _____
 - l. Dexamethasone (Decadron) _____
 - m. Loperamide (Imodium) _____
 - n. Meperidine HCl (Demerol) _____
 - o. Ortho-Novum _____

MEDICATION CLASSIFICATIONS - SPECIFICS

VITAMINS AND MINERALS

SELF-TEST QUESTIONS - Lesson 10, Section 1

1. Eating a _____ diet will provide adequate vitamins and minerals.

2. List four periods when additional vitamins and minerals may be required.

3. List your responsibilities when administering vitamins and minerals.

4. Define:

Hematinic: _____

5. List two (2) side effects of Hematinics.

1. _____

2. _____

6. Side effects can be reduced if: _____

7. Liquid iron preparations should be given through a _____.

MEDICATIONS THAT AFFECT THE RESPIRATORY SYSTEM
SELF-TEST QUESTIONS - Lesson 10, Section 2

1. List the symptoms of an allergic response: _____

2. Symptoms of anaphylactic shock are: _____

3. Anaphylactic shock may be caused by _____

4. Define Antihistamine: _____

5. Antihistamines are used for: _____

6. Most common side effects of antihistamines are: _____

7. Define Expectorant: _____

8. Define Antitussives: _____

9. Two cautions to observe: _____

10. List three (3) side effects of cough preparations:

- (1) _____
- (2) _____
- (3) _____

11. Define Bronchodilators: _____

12. List the side effects of bronchodilators: _____

13. Antitubercular medications are used to treat: _____

14. List side effects of antitubercular medications _____

15. The possibility of nausea and vomiting may be _____ by giving
medications _____ meals.

MEDICATION CLASSIFICATIONS
GENERAL AND LOCAL ANTI-INFECTIVES
SELF-TEST QUESTIONS - Lesson 10, Section 3

1. Antibiotic medications are used to _____ or control bacteria.
2. Some antibiotics are _____ for certain bacteria.
3. Bacteria can be gram _____ or gram _____.
4. Broad spectrum antibiotics have a _____ of activity.
5. Narrow spectrum antibiotics have a narrow _____ of activity.
6. If an individual is seriously ill, he/she may be given a _____ antibiotic prior to lab results.
7. Always read label for _____ directions.
8. Before giving _____ check the _____ date
9. Antibiotics should not be used for _____ infections. With frequent use of antibiotics a body can become _____.
10. An allergic reaction is the body's reaction to _____ substance.
11. Toxic effect can be _____ and leave permanent _____.
12. Toxic reactions are _____ but are _____ when they occur.
13. Possible signs of toxic reactions are: _____

14. Never administer an antibiotic unless you are sure the individual has never had a _____ reaction.

15. If an individual has had an _____ it must be _____ and reported.
16. List responsibilities when administering antibiotics:

17. Define Antifungal Agents: _____

18. Define Amebicides: _____

19. Define Trichomonacides: _____

20. List responsibilities when administering:
(a) Amebicides: _____

(b) Trichomonacides: _____

21. Lotions and shampoos for treating lice should never be used on _____ areas of the skin.
22. What are the available forms of medications used for treating scabies and lice?

23. When using medications to treat lice and scabies, always _____

24. List cautions of lice and scabies infestations: _____

25. Define Anthelmintics _____

List side effects of Anthelmintics: _____

MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE CARDIOVASCULAR SYSTEM

SELF-TEST QUESTIONS - Lesson 10, Section 4

1. What is the action of Digitalis? _____
2. Digitalis preparations have _____ spelling.
3. If the pulse is below _____, you should request further guidance
before administering Digitalis preparations.
4. List side effects of Digitalis preparations: _____

5. Define Antiarrhythmic medications: _____

6. Two responsibilities when administering antiarrhythmic medications include:

7. List possible side effects of Antiarrhythmic medications: _____

8. Vasodilators may be used to prevent _____ pain and increase

9. Define Sublingual: _____
10. List side effects of Vasodilators: _____

11. Salt can contribute to _____

12. Diuretics _____urine and salt excretion.
13. Potassium is necessary for _____and _____function.
14. Signs of potassium depletion are: _____

15. Responsibilities when administering diuretics are: _____

16. Define Antihypertensives: _____
17. Major caution with Antihypertensives is to monitor_____
18. List possible side effects of Antihypertensive medications: _____

19. Two Most common side effects are: _____

20. a. Anticoagulants are medications which _____

- b. Coagulants _____clot formation.
21. Signs of hemorrhage are: _____

22. When an individual is on_____therapy,
_____ should be done routinely and whenever stopping and starting another medication.

MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE URINARY SYSTEM

SELF-TEST QUESTIONS - Lesson 10, Section 5

1. Sulfonamides are used to treat _____
2. List two responsibilities: _____
3. List side effects: _____
4. Once an individual has urinary tract infection, it is likely to _____

5. Urinary antiseptics may _____ the color of urine and cause stomach _____.
6. List your responsibilities:

7. When a urinary antiseptic has AZO before the name, _____
has been added.
8. Urecholine _____ urinary retention.
9. Side effects associated with Urecholine include:

MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE NERVOUS SYSTEM

SELF-TEST QUESTIONS - Lesson 10, Section 6

1. C.N.S. stimulants will:

Increase _____

Increase _____

Increase _____

Suppress. _____

2. Caffeine is a mild _____ stimulant.

3. List side effects of Caffeine: _____

4. Amphetamines are _____ stimulants.

5. Amphetamines may be used to treat _____, but are more often used
for _____ children.

6. List common side effects of amphetamines: _____

7. Central Nervous System depressants will:

Decrease _____ Lessen

Decrease _____ Promote

8. Define:
Hypnotic: _____
Sedative: _____
9. List side effects of sedative-hypnotics: _____

10. The major caution associated with sedative-hypnotics is: _____

11. Can you think of ways to calm an individual other than drugs?

12. Sedative-hypnotics will interact with _____

13. Alcohol is a C.N.S _____
14. Sedative hypnotics reduce effectiveness of: _____

15. Major life threatening side effects of sedative hypnotics:

16. If you observe life threatening signs, immediately _____ the
physician or nurse.
17. Define analgesics: _____

18. Two classes of analgesics are: _____

19. Narcotic analgesics are capable of _____ severe pain.
20. Common side effects of narcotics are: _____

21. When individuals are taking narcotics, the _____ rate should be checked.
22. Define: Antipyretics: _____

Anti-inflammatory _____

23. List side effects of analgesics: _____

24. When possible, administer salicylates with _____
or after _____.
25. Define Anti-Anxiety Medications: _____

26. Anti-Anxiety Medications can cause _____ and
_____ dependence.
27. List side effects of Anti-Anxiety Medications: _____

28. When taking antianxiety medication, stomach distress can be minimized by:

29. Define Antipsychotic Medications: _____

30. List the severe side effects of antipsychotics: _____

31. Define Tardive Dyskinesia _____

32. List some signs of a blood dyscrasia: _____

33. Antidepressants will relieve _____ and _____
34. List side effects of Antidepressants: _____

35. _____ should be avoided when an individual is taking MAOI medications.
36. _____ is a medication used for individuals who are diagnosed as manic-depressives.
37. Anticonvulsants are used to control: _____

38. List side effects of anticonvulsants: _____

39. A way to decrease gum overgrowth is: _____
40. Always give anticonvulsants with large amounts of _____
or after _____

**MEDICATION CLASSIFICATIONS MEDICATIONS THAT
AFFECT THE ENDOCRINE SYSTEM**

SELF-TEST QUESTIONS - Lesson 10, Section 7

1. Define Diabetes Mellitus: _____

2. List the functions of insulin: _____

3. List the most common signs of Diabetes Mellitus: _____

4. Complete the Chart:
Causes of Insulin shock: _____
Onset: _____
Signs: _____

First aid measure for shock: _____

Causes of Diabetic Coma: _____
Onset: _____
Signs: _____

5. Oral hypoglycemics resemble _____ activity.

6. List side effects of oral hypoglycemics: _____

7. Steroids may be used for: _____
8. Define Steroids: _____

9. List responsibilities when administering steroid medication:

10. List side effects of steroids:

11. When giving birth control medications, always _____ label for directions.
12. List dangerous side effects of the birth control pills:

MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE GASTROINTESTINAL SYSTEM
SELF-TEST QUESTIONS - Lesson 10, Section 8

1. Define Antacid: _____
2. Signs of excess stomach acid are: _____
3. Define emetic: _____
4. Do not give emetics if the poison is: _____
5. Name a medication used to cause vomiting: _____
6. Define anti-emetic: _____
7. Antihistamines may be used as: _____
8. Side effects of antiemetics may include: _____

9. Household remedies for nausea and vomiting are: _____

10. Cathartics and laxatives are used for: _____
11. List causes of constipation: _____

12. Cathartics and laxatives should not be given if individual complains of: _____

13. List side effects of laxatives: _____

14. List causes of diarrhea: _____

15. Simple diarrhea is due to: _____
16. Most frequent side effects of antidiarrheal medications is:

17. PPI s and H2 Antagonists are used to treat _____ and _____.

MEDICATION CLASSIFICATIONS
MEDICATIONS THAT AFFECT THE SKIN AND MUCOUS MEMBRANES

SELF-TEST QUESTIONS - Lesson 10, Section 9

1. Medications applied to skin may have a _____ or _____ effect.
2. Define:
Emollient: _____
Demulcent: _____
Astringent: _____
Counterirritants: _____
Antipruritics: _____
3. Define:
Antiseptics: _____
4. Always read _____ for directions.

**MEDICATION CLASSIFICATIONS MEDICATIONS
THAT AFFECT THE EYE AND EAR**

SELF-TEST QUESTIONS - Lesson 10, Section 10

1. Define Miotics: _____
2. List two antibiotic ophthalmic ointments: _____

3. List your major responsibilities when working with eye medications: _____

4. _____ are used for ear infections.
5. Nausea and vomiting may be relieved by: _____

MEDICATION ADMINISTRATION COURSE

PART IV

PRACTICAL CHECKLISTS 1 - 26

**REVISED – 1998
REVISED FEBRUARY – 2018**

MEDICATION ADMINISTRATION TRAINING COURSE

PRACTICAL DIRECTIONS

1. The trainee must pass each of the following practical tasks to the satisfaction of the instructor. (The LPN may observe the trainee performing the practical tasks under the delegation of the RN instructor.)
2. The Medication Attendant guidelines state that 20 hours of practical training is needed to complete this course, 10 hours can be in classroom instruction and demonstration, and the remaining 10 hours are to be in the living unit. **Each medication pass can be counted as 30 minutes of practical time.**
3. Each step of the practical checklist is rated by the instructor as satisfactory (**S**) or unsatisfactory (**U**) as the trainee demonstrates the specific task. In order to pass a specific practical, the trainee must receive a satisfactory rating on all steps of the checklist. The overall rating by the instructor should be satisfactory. The trainee can be allowed to retake the specific practical they failed until a satisfactory rating is obtained. If the trainee does not encounter a specific task included in the checklists in their work environment, a verbal explanation of the procedure may be accepted with the instructor's permission.
4. Certification as a Medication Attendant is not awarded to an individual until he/she has passed the written exam administered by the state, and all practical checklists have been rated satisfactory by the instructor.

LISTING OF PRACTICAL CHECKLISTS

- | | |
|---|--|
| 1. Handwashing | 15. Oral Temperatures |
| 2. Oral medications
(Tablets and Capsules) | 16. Rectal Temperatures |
| 3. Liquid Medications | 17. Axillary Temperatures |
| 4. Topical Medications | 18. Tympanic Temperatures (Ear) |
| 5. Eye Medications | 19. Transdermal Patches |
| 6. Ear Medications | 20. Nasal Atomizer |
| 7. Capillary Blood Glucose | 21. Oral Powdered Medications |
| 8. Rectal Suppositories | 22. Charting |
| 9. Vaginal Suppositories/Creams | 23. Crushing Tablets |
| 10. Disposable Enemas | 24. Rectal Creams |
| 11. Disposable Douches | 25-A Oral Inhalant Aerosol (Nebulizer) |
| 12. Counting Pulse | 25-B Oral Inhalant Atomizer |
| 13. Counting Respirations | 26. Sublingual Tablets |
| 14. Measuring Blood Pressure | |

OCDD - State of Louisiana – Certified Medication Attendant Course

MONITOR'S CHECKLIST FOR PRACTICE SESSIONS

STAFF MEMBER: _____ DATE: _____

NURSE: _____ TOTAL TRAINING TIME: _____

Directions:

1. This checklist is to be used during the 20 hours of practical required prior to the final practical session.
2. This general checklist is rated satisfactory (S), unsatisfactory (U) or Non-applicable (N/A).
3. Check off procedures performed and comment as needed.
4. Review this checklist with trainee after the practice session and discuss your findings. Have staff member sign this sheet to verify the practice session and your findings.
5. Sign below and file with trainee's folder to document the 20 hours of practice.

Monitor's Checklist	S	U	N/A
1. Cleaned top of cabinet/cart where medication will be administered.			
2. Washed hands			
3. Gathered appropriate equipment.			
4. Checked label 3 times: Before removing container from shelf; before administering; and, before retiring container to shelf.			
5. Prepared specific medication correctly.			
6. Administered specific medication correctly.			
7. Documented medication administration/observations correctly.			
8. Observed individual swallowing medication.			
9. Returned medication and secured medication area.			
10. Washed hands.			

PROCEDURES PERFORMED:

____ Handwashing	____ Disposable Enemas	____ Nasal Atomizer
____ Oral Meds (Tablets/ Capsules)	____ Disposable Douches	____ Oral Powdered Medications
____ Liquid Medications	____ Counting Pulse	____ Charting
____ Topical Medications	____ Counting Respirations	____ Crushing Tablets
____ Eye Medications	____ Taking Blood Pressure	____ Rectal Creams
____ Ear Medications	____ Oral Temperatures	____ Oral Inhalant Aerosol (Nebulizer)
____ Capillary Blood Glucose	____ Rectal Temperatures	
____ Rectal Suppositories/Creams	____ Axillary Temperatures	____ Oral Inhalant Atomizer
____ Vaginal Suppositories/Creams	____ Tympanic Temperature (Ear)	____ Sublingual Tablets
	____ Transdermal Patches	

Comments _____

Staff Signature

Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #1
HANDWASHING

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Handwashing		S	U	N/A
1.	Check equipment (soap, paper towels, sink, running water).			
2.	ADJUST RING IF WEARING ONE.			
3.	Approach sink without clothing touching sink.			
4.	Hold hands and wrist downward and wet hands.			
5.	Lather hands with soap.			
6.	Continue scrubbing action for 1-2 minutes cleaning between fingers, back and palms of hands and fingernails by rubbing in palms of hands.			
7.	Hold hands down and rinse hands.			
8.	Dry one hand with paper towel from wrists to fingertips, with one wiping motion and then discard and repeat if necessary.			
9.	Repeat other hands. (Do not use same towel twice)			
10.	Turn water off with clean paper towel.			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #2
ORAL MEDICATION (TABLETS/CAPSULES)

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Oral Medication (Tablets/Capsules)		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Take vital signs if necessary.			
8.	Do 2nd check: using the 6 Rights of Medication Administration.			
9.	Pour correct dosage.			
10.	Do 3rd check: using the 6 Rights of Medication Administration.			
11.	Identify individual, then administer medication with cup of water. Explain procedure.			
12.	Observe individual to ensure swallowing of medication.			
13.	Document administration of medication in medication administration record.			
14.	Clean medication administration area.			
15.	Wash hands.			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana - Certified Medication Attendant Course
Practical Checklist #3
LIQUID MEDICATIONS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:** 1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Liquid Medications		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Shake medication.			
8.	Do 2nd check: using the 6 Rights of Medication Administration.			
9.	Remove cap properly and place open side up on counter.			
10.	Place thumb nail at correct dosage line			
11.	Place measuring cup on flat surface at eye level and pour the prescribed dose. (Read at lowest level of fluid surface)			
12.	Wipe outside of bottle and replace cap			
13.	Do 3rd check: using the 6 Rights of Medication Administration.			
14.	Identify individual then administer medication.			
15.	Follow with water unless otherwise indicated and observe individual swallowing medication.			
16.	Document administration of medication in Medication Administration Record (MAR)			
17.	Clean medication administration area and wash hands.			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #4
TOPICAL MEDICATIONS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Topical Medications	S	U	N/A
1. Clean top of cart/cabinet where medication will be administered.			
2. Wash hands.			
3. Read Medication Administration Record (MAR)			
4. Obtain proper equipment.			
5. Unlock medication storage area & obtain medication.			
6. 1st check: Check medication label according to the 6 Rights of Medication Administration.			
7. Do 2nd check: using the 6 Rights of Medication Administration.			
8. Identify individual.			
9. Do 3rd check: using the 6 Rights of Medication Administration.			
10. Explain procedure, provide privacy and help individual undress if necessary.			
11. Put on gloves and clean area if necessary			
12. Administer medication using gloves or applicator.			
13. Apply dressing if necessary.			
14. Remove gloves, dispose of equipment and wash hands.			
15. Document administration of medication in Medication Administration Record (MAR)			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #5
EYE MEDICATIONS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:** 1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Eye Medications	S	U	N/A
1. Clean top of cart/cabinet where medication will be administered.			
2. Wash hands.			
3. Read Medication Administration Record (MAR)			
4. Obtain proper equipment.			
5. Unlock medication storage area & obtain medication.			
6. 1st check: Check medication label according to the 6 Rights of Medication Administration.			
7. Do 2nd check: using the 6 Rights of Medication Administration. Shake medication well			
8. Identify individual, then position head tilted backward.			
9. Do 3rd check: using the 6 Rights of Medication Administration.			
10. Remove top properly and place upright on counter			
11. Explain procedure to individual. Instruct individual to look upward.			
12. Make conjunctival sac & administer eye drops, counting out loud & using sterile technique.			
13. For eye ointments, gently squeeze appropriate amount from inner to outer canthus.			
14. Close individual's eye and press gently on inner canthus.			
15. Wipe away excess ointment gently with tissue.			
16. Document administration of medication in Medication Administration Record (MAR)			
17. Clean medication administration area and wash hands.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCCD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #6
EAR DROPS

STAFF MEMBER _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Ear Drops		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Identify individual, then clean ears with warm moist wash cloth.			
9.	Warm ear medication.			
10.	Do 3rd check: using the 6 Rights of Medication Administration.			
11.	Explain procedure, position individual on unaffected side.			
12.	Straighten ear canal & administer medication.			
13.	Allow medication to drain into ear canal.			
14.	Document administration of medication in Medication Administration Record (MAR)			
15.	Clean medication administration area and wash hands.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course



Practical Checklist #7

Measuring Capillary Blood Glucose

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

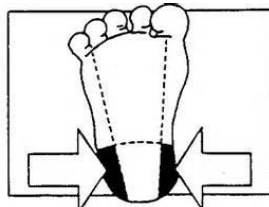
- Directions:** 1. The trainee will be provided with a verbal demonstration of the procedure. Explain that it is **up to their agency** if this procedure will be allowed and that they will **require training by their agency nurse** before performing this procedure.
2. Explain that there are different Glucometers and that they will need to follow the instructions for the meter they will be using.
3. For purposes of this demonstration the instructions are for **the actual finger stick**

Measuring Capillary Blood Glucose	S	U	N/A
1. Before a meter is used for the first time and with each new box of test strips the meter must be calibrated . This means the meter is set to 'match' the strips being used by coding it with the calibration strip supplied in the packet of test strips. Follow instructions for the meter you will be using as meters vary. REMEMBER TO CHANGE THE CODE CHIP with every new box of test strips			
2. Obtain proper equipment.			
3. Explain the procedure to the individual and instruct them to wash their hands with soap and warm water and dry thoroughly. The warm water will help facilitate blood flow.			
4. Wash and dry your hands and put on disposable gloves			
5. Remove a test strip from the container and place in the meter. Some meters require placing strip in meter following the finger stick. Follow meter instructions.			
5. Massage the finger that will be used to increase blood flow. The ring or middle finger of the non- dominant hand is best.			
6. Use 70% Isopropyl Alcohol to cleanse the area of the finger. Wipe dry with a clean gauze pad or cotton ball. Make sure the area is completely dry before the stick as alcohol will interfere with the test result.			
7. If you are using a lancet, remove it from its container and grasp it between the thumb and fore finger. If you are using a finger puncture device , you will need to follow the instructions for the device.  Puncture Device  Lancets			
8. Hold the finger firmly and use darting motion to puncture the finger if you are using a lancet. Apply pressure to start blood flow. Use a gauze pad to wipe away the first drop of blood.			

9. Touch the edge of the test strip to the next blood drop -- the strip should draw the blood into the testing window.			
10. Apply pressure to the puncture site with a small gauze pad while you wait For the test results. If the blood sample was obtained appropriately, the glucometer should display the blood sugar on the screen within a few minutes.			
11. Turn off the meter and disposes of the reagent strip, cotton ball, gauze pad, paper towel, alcohol pad, and lancet in the proper containers.			
12. Removes the procedure gloves and disposes of them in the proper container.			
13. Document the results in the blood glucose log. Notify the Nurse or Physician if results are above or below the established parameters for the individual.			



Puncture site



Puncture site for infants

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

SIGNATURE OF NURSE _____

**THE STUDENT WILL NOT ACTUALLY PERFORM THE FINGER STICK ONLY
PROVIDE A VERBAL DEMONSTRATION**

If their agency allows them to perform the finger stick the Agency Nurse will train them

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #8
RECTAL SUPPOSITORIES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Rectal Suppositories		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Put gloves on & prepare suppository for insertion by placing small amount of water soluble lubricate on tapered end.			
9.	Do 3rd check: using the 6 Rights of Medication Administration.			
10.	Provide private area, explain procedure & help individual undress.			
11.	Position individual on their side & expose on the rectal area.			
12.	Separate buttock with one hand & gently insert tapered end of suppository into rectum with gloved finger (2" for adults; 1" for child) (Do not insert against resistance)			
13.	Press buttocks together for one minute.			
14.	Instruct individual to remain in position for 15 minutes if possible.			
15.	Remove gloves, dispose of equipment & wash hands.			
16.	Document administration of medication in Medication Administration Record (MAR)			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical)

 Signature of Nurse

**OCDD - State of Louisiana –Certified Medication Attendant
Course**

**Practical Checklist
#9**

**VAGINAL SUPPOSITORIES/VAGINAL
CREAMS**

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:** 1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Vaginal Suppositories /Vaginal Creams

S U

N/A

2. Wash hands.			
3. Read Medication Administration Record (MAR)			
4. Obtain proper equipment.			
5. Unlock medication storage area & obtain medication.			
6. 1st check: Check medication label according to the 6 Rights of Medication Administration.			
7. Do 2nd check: using the 6 Rights of Medication Administration.			
8. Identify individual.			
9. Put gloves on.			
10. Prepare suppository for insertion by inserting in applicator and applying a small amount of water soluble lubricate on tapered end.			
11. Prepare vaginal cream by attaching applicator to tube squeeze applicator to fill it with the cream.			
12. For application on external vaginal area squeeze appropriate amount of cream on gauze sponges.			
13. Do 3rd check: using the 6 Rights of Medication Administration.			
14. Provide private area for administration, explain procedure to individual, help undress & position individual in dorsal recumbent position with bed protector under individual's buttocks. Expose only the perineum area.			
15. Separate Labia with one hand & cleanse area from front to back with appropriate cleaning agent.			
16. Insert suppository/cream into vagina with applicator, administer & remove applicator.			
17. Administer vaginal cream externally by applying liberally to area.			
18. Put sanitary pad on. Instruct individual to remain laying down for 15 minutes.			
19. Remove gloves & dispose of equipment.			
20. Wash hands.			
21. Document Administration on Medication Administration record			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat

Signature of Nurse

OCDD- State of Louisiana –Certified Medication Attendant Course
Practical Checklist #10
DISPOSABLE ENEMAS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Disposable Enemas		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain enema.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Do 3rd check: using the 6 Rights of Medication Administration.			
9.	Provide private area, explain procedure and help individual undress			
10.	Position on left side and expose rectal area only.			
11.	Put on gloves and squeeze excess air from disposable enema.			
12.	Separate buttocks with one hand, insert tip of disposable enema and squeeze into rectum. (Do not insert against resistance.)			
13.	Press buttocks together after withdrawing tip and instruct individual to remain in position for one minute (15 minutes if possible).			
14.	Remove gloves, dispose of equipment and wash hands.			
15.	Document administration and results on MAR			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course

Practical Checklist #11

DISPOSABLE DOUCHES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Disposable Douches		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Do 3rd check: using the 6 Rights of Medication Administration.			
9.	Identify individual and explain procedure.			
10.	Help undress in privacy, recline individual in shower or tub.			
11.	Put on gloves and remove excess air out of container.			
12.	Separate labia with one hand and administer douche into the vagina gently.			
13.	Dry area with towel and help individual dress.			
14.	Remove gloves, dispose of equipment, clean area and wash hands.			
15.	Document administration of medication in Medication Administration Record (MAR)			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical)

Signature of Nurse

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #12**

COUNTING PULSE

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Counting Pulse		S	U	N/A
1.	Wash hands.			
2.	Gather equipment (watch with second hand, pencil, paper).			
3.	Identify individual and match with MAR			
4.	Explain procedure to individual.			
5.	Position individual (lie down or sit down with palm of individual's hand facing down with arm supported).			
6.	Place flat surface of your middle finger lightly over individual's radial artery.			
7.	When pulse beat is felt, note rhythm and strength of beat.			
8.	Count pulse for 1 full minute.			
9.	Record pulse on paper.			
10.	If pulse is below 60 and/or any irregular beats or volume noted, report immediately to supervisor.			
11.	Wash hands.			
12.	Document pulse on correct form.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #13**

COUNTING RESPIRATIONS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Counting Respirations		S	U	N/A
1.	Wash hands.			
2.	Gather equipment (watch with second hand, pencil, paper).			
3.	Identify individual and match with MAR			
4.	Hold individual's wrist as if you were taking his pulse so he will not be aware of you watching him breathe.			
5.	Count rise and fall of chest as one respiration.			
6.	Count respirations for one full minute.			
7.	Write down the number immediately.			
8.	Report to your supervisor if respirations are less than 12 or more than 28 a minute, and if respirations are noisy, labored or have irregular pattern.			
9.	Document respirations on correct form.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical)

Signature of Nurse

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #14**

TAKING BLOOD PRESSURE

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.
 4. **Explain that their agency may use a digital monitor and they should be trained on that monitor prior to use.**

Taking Blood Pressure		S	U	N/A
1.	Wash hands.			
2.	Gather equipment (select right size cuff & Stethoscope).			
3.	Identify individual and match with MAR			
4.	Explain procedure to individual.			
5.	Wrap cuff securely but not tightly around upper arm.			
6.	Locate brachial artery with fingers and position arrow above artery.			
7.	Place stethoscope over brachial artery.			
8.	Inflate cuff. (Usually not over 160)			
9.	Slowly release valve.			
10.	Note when 1st thump is heard (systolic pressure)			
11.	Note when last thump or muffling is heard (diastolic).			
12.	Release all of air in cuff and remove from arm.			
13.	Document Blood Pressure on correct form.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical)

Signature of Nurse

Note: The agency may choose to use a digital cuff. Explain that the instructions for that digital cuff should be followed.

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #15**

TAKING ORAL TEMPERATURES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Taking Oral Temperature	S	U	N/A
1. Wash hands.			
2. Gather equipment (oral digital thermometer and disposable sheaths).			
3. Explain procedure to individual.			
4. Perform hand hygiene/wash hands, and apply gloves when appropriate.			
5. Place disposable protective sheath over probe.			
6. Place tip of thermometer under the person's tongue and along the gum line. Instruct the person to keep mouth closed around thermometer.			
7. Thermometer will signal (beep) when a constant temperature registers.			
8. Press the ejection button on the probe to release the disposable sheath. Dispose of gloves			
9. Record temperature on correct form.(be sure to record O for oral route)			
10. Wash hands.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #16**

TAKING RECTAL TEMPERATURES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

Directions: 1. Trainee must perform all applicable steps (verbally) in the task below under the direct supervision of a nurse (RN or LPN).

2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).

3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Taking Digital Rectal Temperature	S	U	N/A
1. Gather equipment (rectal digital thermometer, disposable probe sheaths, gloves, tissue)			
3. Explain procedure to individual.			
4. Position individual on their side & expose buttocks only. Provide privacy			
5. Wash hands and put on gloves			
6. Slide a probe sheath over the pointed end of the thermometer.			
7. Lubricate the end of the probe with a small amount of lubricating jelly			
8. Insert the probe 1" in to the rectum of an adult and ½" into the rectum of a child. Stop inserting the thermometer if it becomes difficult to insert. Never force the thermometer into the rectum.			
7. Keep the thermometer in place until it beeps. Hold it at all times.			
8. Remove the thermometer and Push ejection button to discard disposable sheath into trash receptacle.			
9. Use tissue to clean lubricant from individual's rectum.			
10. Remove gloves and dispose in trash receptacle and wash hands.			
10. Record the thermometer reading on correct form.(be sure to record R for rectal route)			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD- State of Louisiana- Certified Medication Attendant Course
Practical Checklist #17

TAKING AXILLARY TEMPERATURES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Taking Axillary Temperature	S	U	N/A
1. Wash hands.			
2. Gather equipment (digital thermometer and disposable sheaths).			
3. Explain procedure to individual.			
4. Perform hand hygiene/wash hands, and apply gloves when appropriate.			
5. Place disposable protective sheath over probe.			
6. Place tip of thermometer under the person's arm and Instruct the person to remain still.			
7. Thermometer will signal (beep) when a constant temperature registers.			
8. Press the ejection button on the probe to release the disposable sheath. Dispose of gloves if worn.			
9. Wash hands			
10. Record temperature on correct form.(be sure to record AX for the axillary route)			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD- State of Louisiana- Certified Medication Attendant Course
Practical Checklist #18

TAKING TYMPANIC TEMPERATURES (EAR)

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Taking Tympanic Temperature	S	U	N/A
1. Wash hands.			
2. Gather equipment (Ear thermometer, probe covers)			
3. Explain procedure to individual.			
4. Position individual in sitting position and encourage them to sit very still.			
5. Remove probe from container, and attach probe cover to tympanic thermometer unit.			
6. Turn client's head to one side. For an adult, pull pinna upward and back; for a child, pull down and back. Gently insert probe with firm pressure into ear canal.			
7. Remove probe after the reading is displayed on digital unit (usually 2 seconds).			
8. Return tympanic thermometer to storage unit.			
9. Wash hands			
10. Record the reading on the proper document and mark E after the reading to indicate the temp was taken in the ear.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD- State of Louisiana – Certified Medication Attendant Course
Practical Checklist #19

PRE MEASURED TRANSDERMAL PATCHES

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Premeasured Transdermal Patches		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Do 3rd check: using the 6 Rights of Medication Administration.			
9.	Identify individual and explain procedure.			
10.	Provide privacy and help the individual undress if necessary.			
11.	Remove previous patch. Clean and dry the area where new patch will be placed. Rotate sites.			
12.	Adhere medication patch securely. AVOID touching medicated portion of patch.			
13.	Dispose of equipment and wash hands.			
14.	Document administration of medication in Medication Administration Record (MAR)			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

**OCDD - State of Louisiana -Certified Medication Attendant Course
Practical Checklist #20**

NASAL ATOMIZER

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Nasal Atomizer		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Identify individual and ask individual to blow his/her nose to clear nasal passages. Position correctly.			
9.	Do 3rd check: using the 6 Rights of Medication Administration.			
10.	Remove top of medication and place open side up on counter.			
11.	Administer medication, ask individual to inhale at proper time.			
12.	Repeat for other nares, if ordered.			
13.	Document administration of medication in Medication Administration Record (MAR)			
14.	Clean medication administration area and wash hands.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #21

ORAL POWDERED MEDICATION (i.e., FIBER LAXATIVES)

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:** 1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Oral Powdered Medication (i.e.: Fiber laxatives)		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Take vital signs if necessary.			
8.	Do 2nd check: using the 6 Rights of Medication Administration.			
9.	Pour correct dosage.			
10.	Do 3rd check: using the 6 Rights of Medication Administration.			
11.	Mix powdered medication in amount of water prescribed (or described by directions);			
12.	Identify individual. Explain procedure to individual, then administer medication: the individual must swallow entire amount quickly (give. with an additional cup of water).			
13.	Observe the individual to ensure that he has swallowed the medication and water.			
14.	Document administration of medication in Medication Administration Record (MAR)			
15.	Clean medication administration area and wash hands.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

**OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #22**

CHARTING

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Charting	S	U	N/A
Charting is done immediately after the administration of medication.			
Charting accurately indicates person, drug, dose, time & route.			
Medication Administration Record (MAR) is signed.			
Charting is done with indelible ink and in accordance with agency policy.			
Charting is legible.			
If needed, corrections are done properly.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #23

CRUSHING TABLETS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Crushing Tablets		S	U	N/A
1.	Check Medication Administration Record (MAR) and Physician's order to determine if medication may be crushed.			
2.	Follow procedure for Administering oral medication.			
3.	Following the third medication label check: Remove tablet from the packaging using aseptic technique and place the tablet between two appropriate aseptic surfaces (pill crushers, mortar & pestle, etc.) and crush.			
4.	Administer either in powder form or mix in an appropriate medium (i.e.: water or applesauce).			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD- State of Louisiana – Certified Medication Attendant Course
Practical Checklist #24

RECTAL CREAMS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Rectal Creams		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Put gloves on & prepare cream...			
9.	Do 3rd check: using the 6 Rights of Medication Administration.			
10.	Provide private areas, explain procedure & help individual undress.			
11.	Position on side & expose only the rectal area.			
12.	Separate buttock with one hand & gently insert the cream			
13.	into the rectum (Do not insert against resistance).			
14.	Instruct the individual to remain in position for 15 minutes if possible.			
15.	Remove gloves, dispose of equipment & wash hands.			
16.	Document administration of medication & results in Medication Administration Record (MAR)			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

 Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course
Practical Checklist #25-A

ORAL INHALANT AEROSOL (NEBULIZER)

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:** 1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Oral Inhalant Aerosol		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment. Nebulizer, tubing, nebulizer unit (machine), mask or mouthpiece (Supervising nurse should predetermine if a mask or mouthpiece is appropriate) premeasured medication solution, tissue for coughing			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Do 2nd check: using the 6 Rights of Medication Administration.			
8.	Prepare the nebulizer. Connect the tubing to nebulizer and machine			
9.	Identify the client, explain procedure			
10.	Obtain pulse and respirations			
11.	Do 3rd check: using the 6 Rights of Medication Administration.			
12.	Fill the nebulizer with the premeasured medication solution.			
14.	Place mask on client or give the nebulizer with the mouth piece to the client. Turn the machine on and (Have client hold nebulizer upright)			
15.	Monitor client for signs of distress during treatment. (If distress noted discontinue treatment and notify nurse)			
16.	When all the medication solution is nebulized, remove mask or mouth piece. Turn Nebulizer unit off.			
17.	Obtain respirations and pulse. Record according to facility policy.			
18.	Wash hands and document administration on MAR			
19.	Disconnect nebulizer and tubing, store (Nebulizer and tubing should be discarded/replaced after 24 hrs.)			
20.	Monitor for any adverse effects and report any unusual findings			
21.	CMA should be able to describe to the nurse the steps to be taken should profound tachycardia or bronchospasms occur.			

Comments: _____

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (needs to repeat practical)

 Signature of Nurse

OCDD - State of Louisiana –Certified Medication Attendant Course

Practical Checklist #25-B

ORAL INHALANT ATOMIZER

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Oral Inhalant Atomizer		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment.			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Measure pulse rate and respirations			
8.	Do 2nd check: using the 6 Rights of Medication Administration.			
9.	Prepare the atomizer.			
10.	Do 3rd check: using the 6 Rights of Medication Administration.			
11.	Identify individual and explain the procedure			
12.	Have the client hold the atomizer up right, squeeze the prescribed number of puffs and inhale			
13.	Measure respirations and pulse. Record according to facility procedure			
14.	Wash hand and document the administration on the MAR			
15.	Monitor for any adverse effects and report any unusual findings			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

Signature of Nurse

OCDD - State of Louisiana – Certified Medication Attendant Course

Practical Checklist #26

SUBLINGUAL TABLETS

STAFF MEMBER: _____ DATE: _____

INSTRUCTOR: _____

- Directions:**
1. Trainee must perform all applicable steps in the task below under the direct supervision of a nurse (RN or LPN).
 2. The nurse will rate each step in the task satisfactory (S), unsatisfactory (U).
 3. The trainee must have a rating of satisfactory on all steps to pass this practical.

Sublingual Tablets		S	U	N/A
1.	Clean top of cart/cabinet where medication will be administered.			
2.	Wash hands.			
3.	Read Medication Administration Record (MAR)			
4.	Obtain proper equipment. (Possible gloves)			
5.	Unlock medication storage area & obtain medication.			
6.	1st check: Check medication label according to the 6 Rights of Medication Administration.			
7.	Check Vital Signs if ordered or indicated			
8.	Do 2nd check: using the 6 Rights of Medication Administration.			
9.	Pour the correct dose			
10.	Do 3rd check: using the 6 Rights of Medication Administration.			
11.	Identify individual and explain the procedure			
12.	Tell the client to place the tablet under his tongue. If the client is unable to place the tablet, the CMA may need to assist him by dropping the tablet under his tongue. The CMA should wear gloves if doing so. (Remove gloves if used and discard properly)			
13.	Remind client to allow the tablet to dissolve and monitor			
14.	Wash hands and document the administration on the MAR			
15.	Monitor for any adverse effects and report any unusual findings			

Comments:

OVERALL RATING: _____ SATISFACTORY _____ UNSATISFACTORY (Needs to repeat practical.)

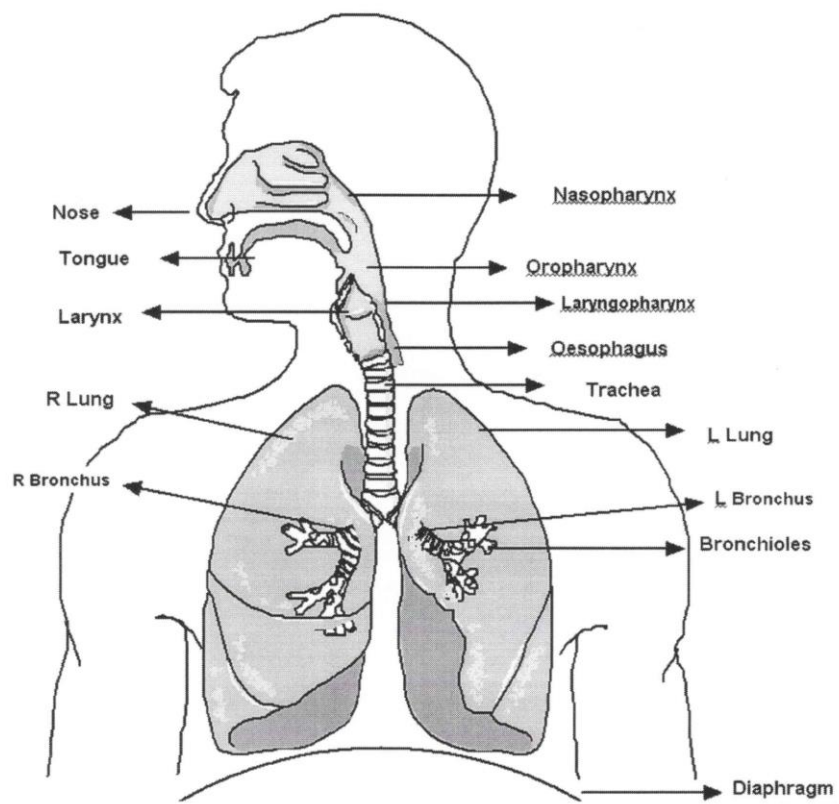
Signature of Nurse

MEDICATION ADMINISTRATION COURSE

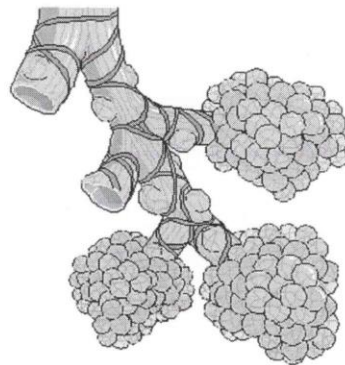
PART V

**IMAGES
AND
AIMS PROCEDURE**

**REVISED – 1998
REVISED FEBRUARY – 2018**

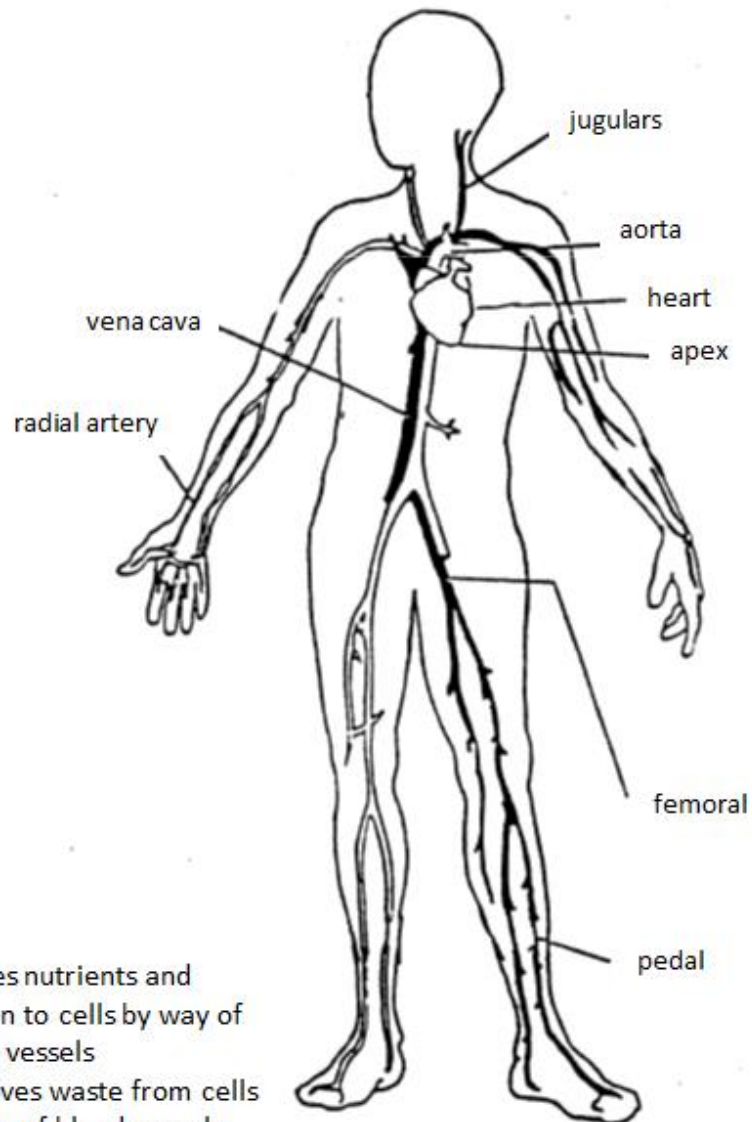


Alveoli -
site of gas exchange



The Cardiovascular System

KEY

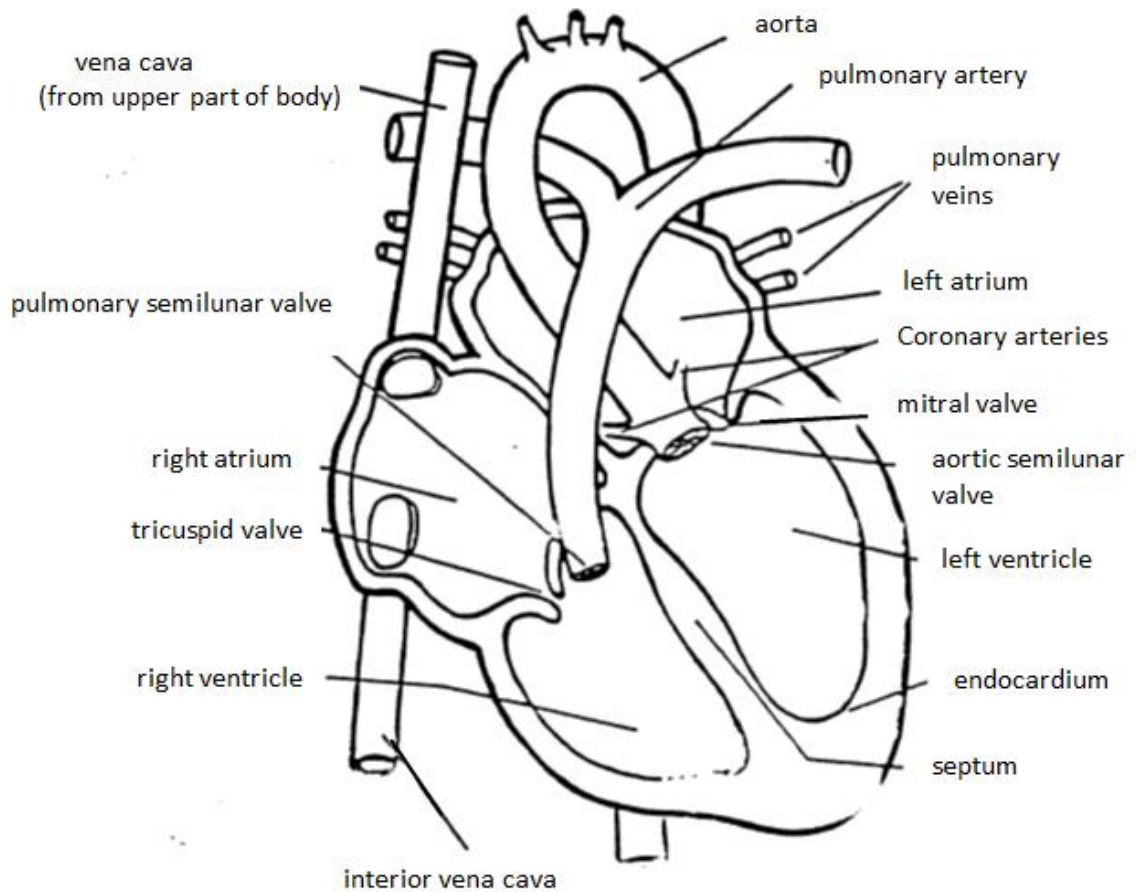


Function:

1. Carries nutrients and oxygen to cells by way of blood vessels
2. Removes waste from cells by way of blood vessels

The Heart

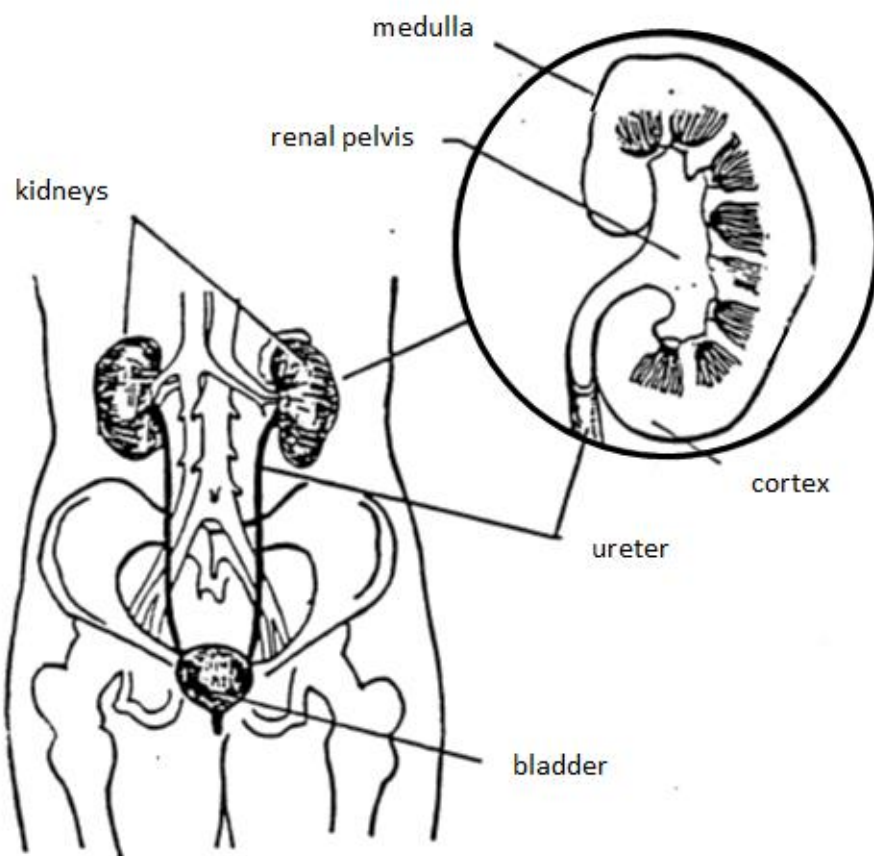
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Function: 1. Pumps blood through the blood vessels

The Urinary System

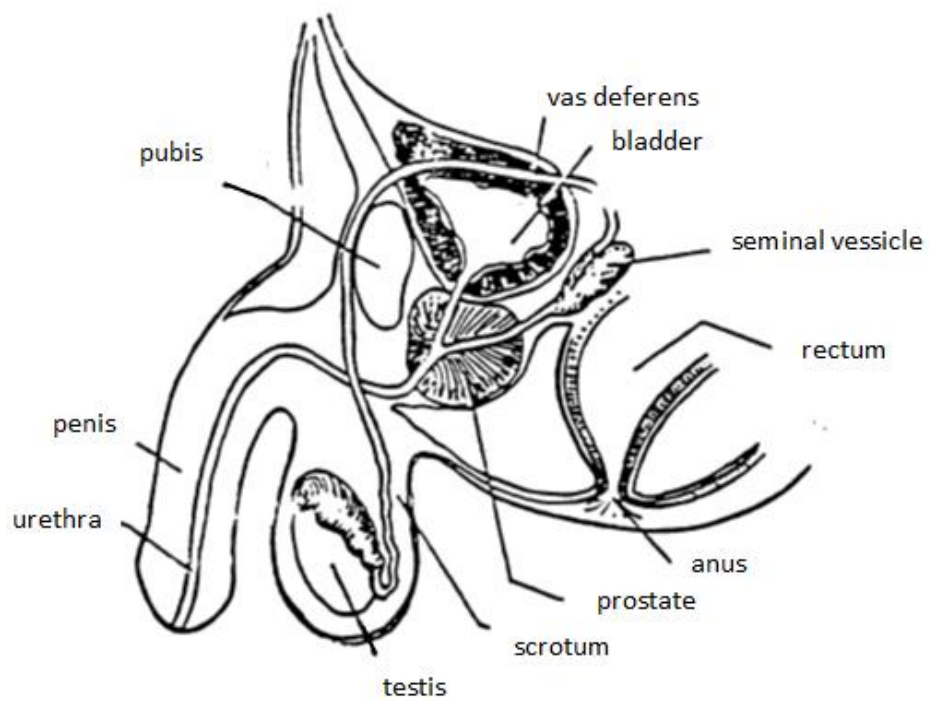
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Function:

1. Produces urine
2. Removes wastes from blood

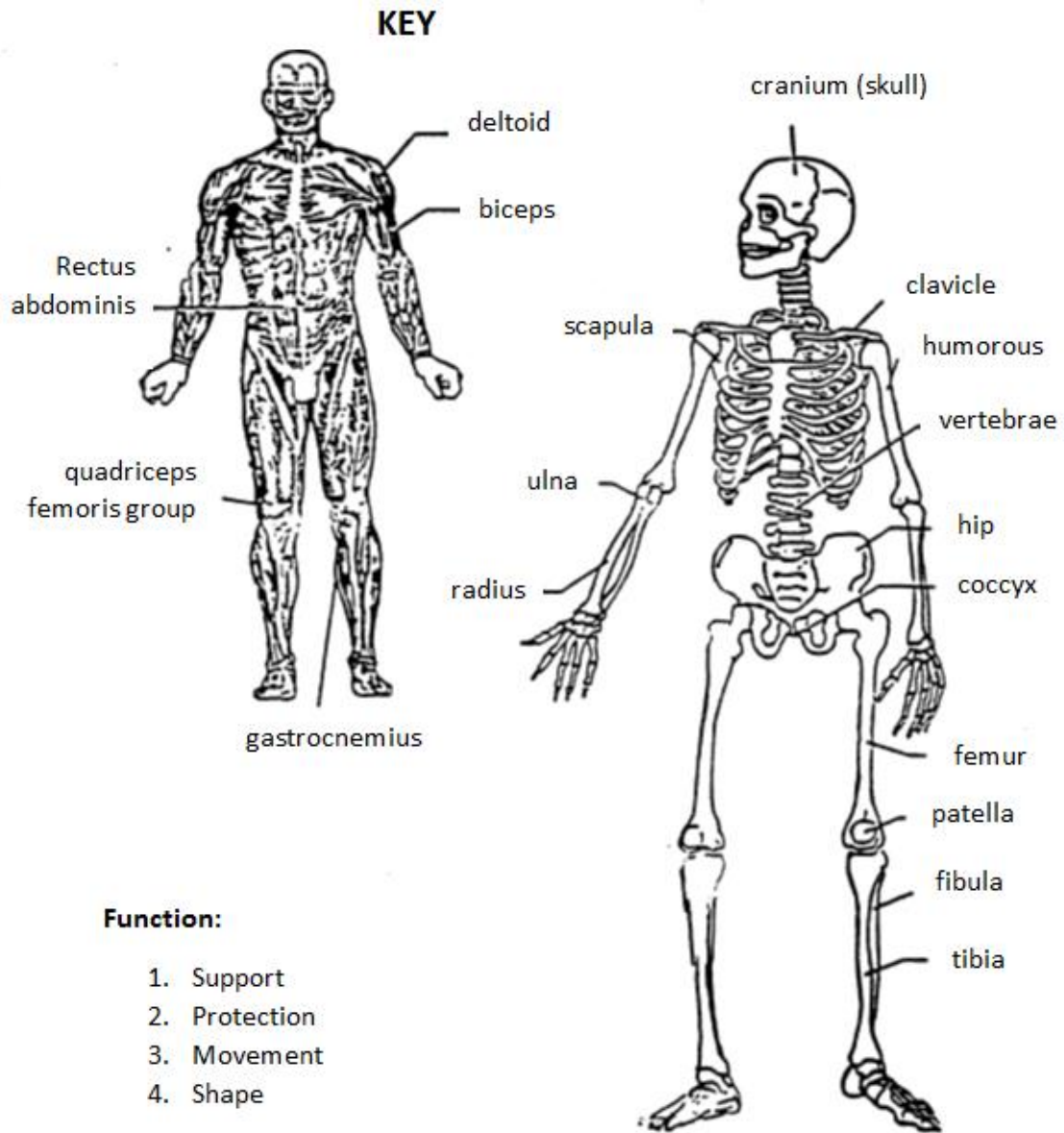
The Male Reproductive System



Function:

1. Produces male hormones
2. Produces male sex cells

The Musculoskeletal System



ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS)

INDIVIDUAL NAME _____ RATER _____ DATE _____

(circle one)

**FACIAL AND
ORAL
MOVEMENTS:**

- | | | | | | | | |
|----|--|---|---|---|---|---|---|
| 1. | MUSCLES OF FACIAL EXPRESSION.
e.g., movement of forehead eyebrows,
periorbital area, cheeks, include frowning,
blinking, smiling, grimacing | 0 | 1 | 2 | 3 | 4 | 5 |
| 2. | LIPS AND PERIORAL AREA. e.g.,
puckering, pouting, smacking | 0 | 1 | 2 | 3 | 4 | 5 |
| 3. | JAW. e.g., biting, clenching, chewing,
mouth opening, lateral movement | 0 | 1 | 2 | 3 | 4 | 5 |
| 4. | TONGUE. Rate only increase in movement
both in and out of mouth, NOT ability to
sustain movement | 0 | 1 | 2 | 3 | 4 | 5 |

**EXTREMITY
MOVEMENTS:**

- | | | | | | | | |
|----|---|---|---|---|---|---|---|
| 5. | UPPER (arms, wrists, hands, fingers)
include chronic Movements (i.e., rapid,
objectively purposeless, irregular,
spontaneous) athetoid movements (i.e.,
slow, irregular, complex, serpentine). DO
NOT include tremor (i.e., repetitive, regular,
rhythmic). | 0 | 1 | 2 | 3 | 4 | 5 |
| 6. | LOWER (legs, knees, ankles, toes) e.g.,
lateral knee movement, foot tapping, heel
dropping, foot squirming, inversion and
eversion of foot. | 0 | 1 | 2 | 3 | 4 | 5 |

TRUNK MOVEMENTS:

- | | | | | | | | |
|----|---|---|---|---|---|---|---|
| 7. | NECK, SHOULDERS, HIPS. e.g., rocking,
twisting, squirming, pelvic gyrations. | 0 | 1 | 2 | 3 | 4 | 5 |
|----|---|---|---|---|---|---|---|

**GLOBAL
JUDGEMENTS:**

- | | | | | | | | |
|-----|--|--|---|---|---|---|-----------------------|
| 8. | SEVERITY OF ABNORMAL MOVEMENTS | 0 | 1 | 2 | 3 | 4 | 5 |
| 9. | INCAPACITATION DUE TO ABNORMAL
MOVEMENTS | | | | | | |
| 10. | INDIVIDUALS AWARENESS OF
ABNORMAL MOVEMENTS- RATE ONLY
INDIVIDUAL'S REPORT | No awareness
Aware, no distress
Aware, mild distress
Aware, moderate distress
Aware, severe distress | | | | | 0
1
2
3
4 |

DENTAL STATUS:

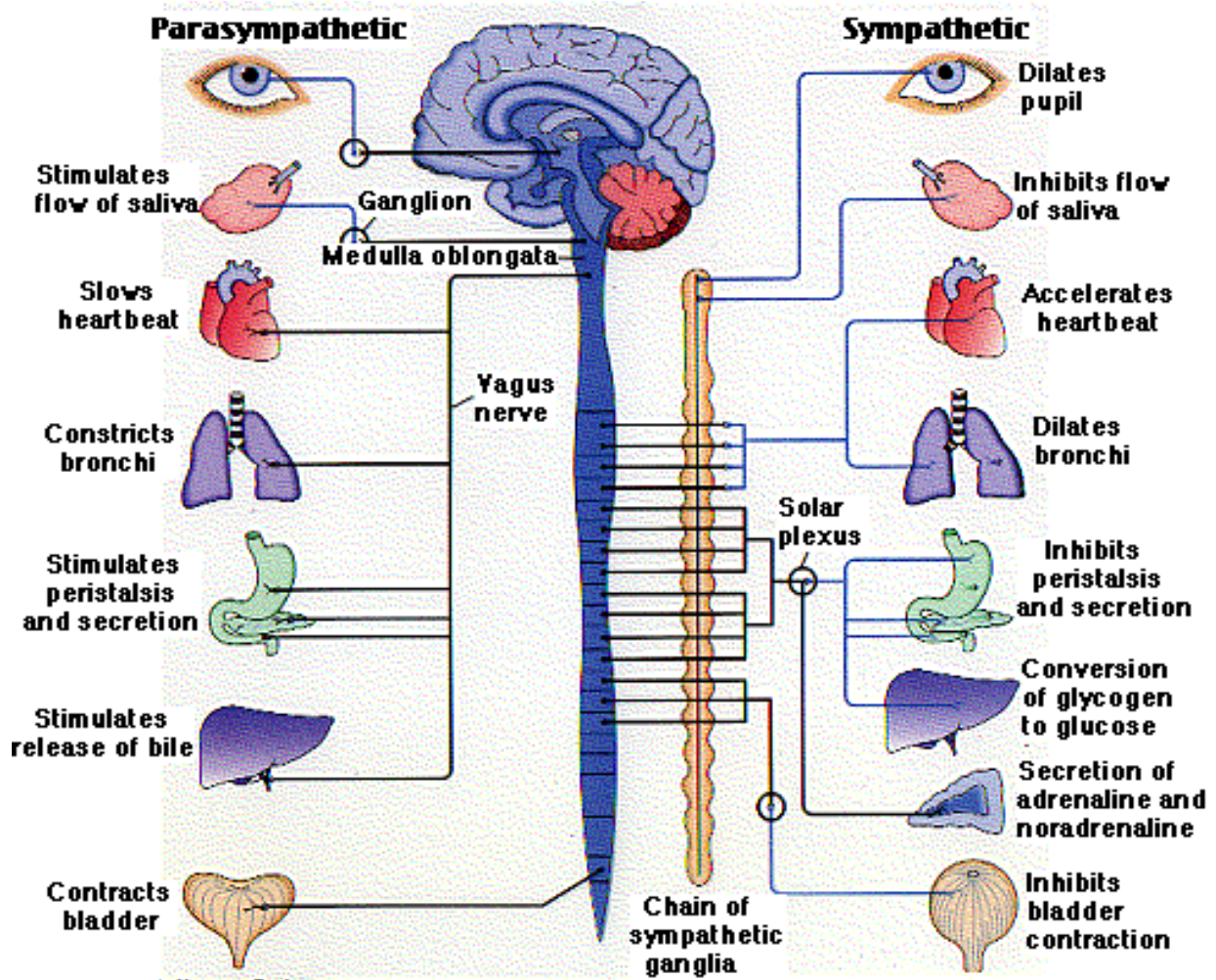
- | | | | | | | | | |
|-----|--|-----|--|--|--|--|--|---|
| 11. | CURRENT PROBLEMS WITH TEETH
AND/OR DENTURES | No | | | | | | 0 |
| | | Yes | | | | | | 1 |
| 12. | DOES THE INDIVIDUAL USUALLY WEAR
DENTURES | No | | | | | | 0 |
| | | Yes | | | | | | 1 |

EXAMINATION PROCEDURE

Either before or after completing the Examination Procedure, observe the individual unobtrusively, at rest (e.g., in the living room).

The chair to be used in this examination should be hard, firm, and without arms.

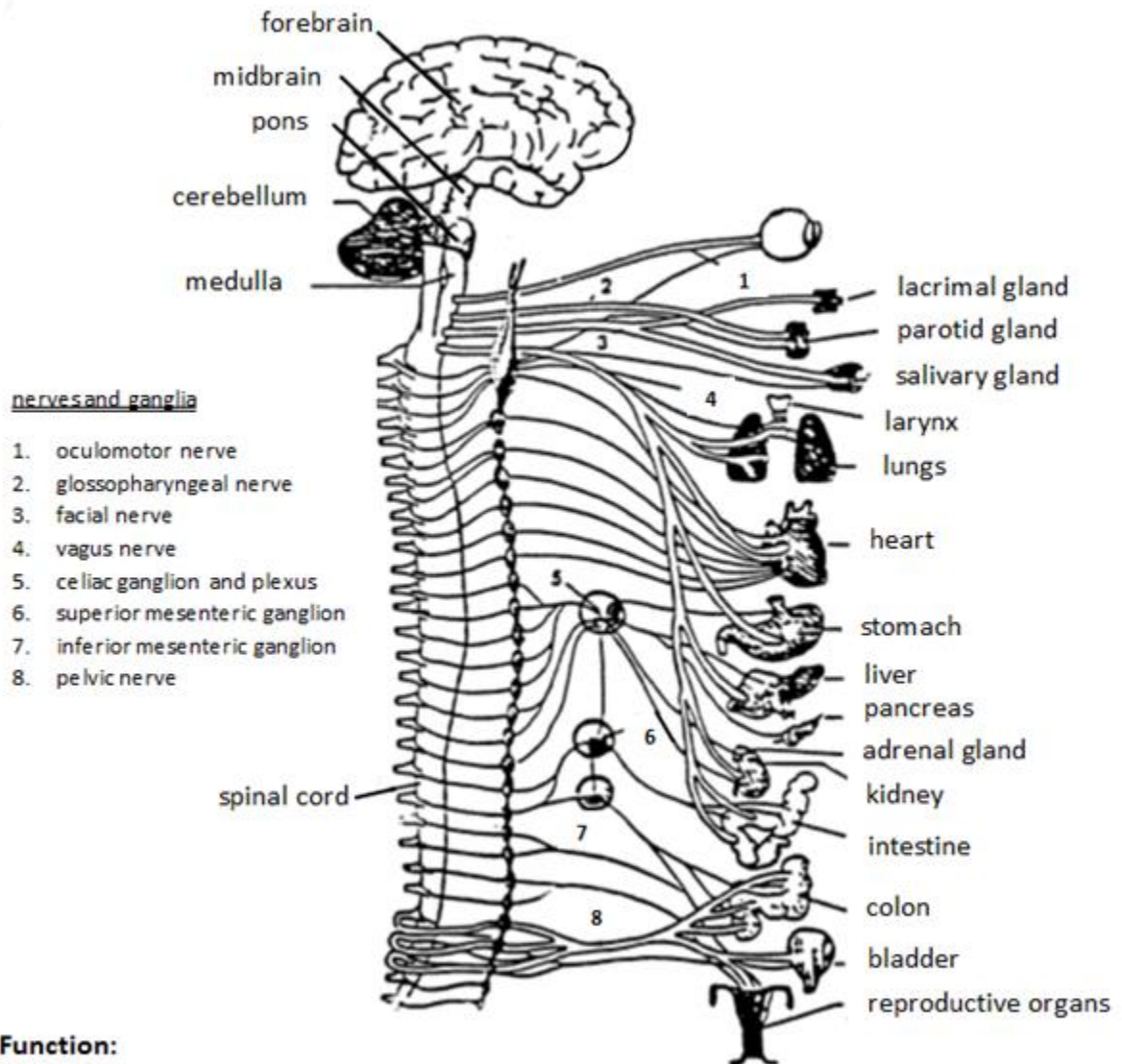
1. Ask individual whether there is anything in his/her mouth (i.e., gum, candy, etc.) and if there is, to remove it.
2. Ask individual about the current condition of his/her teeth. Ask individual if he/she wears dentures. Do teeth or dentures bother individual now?
3. Ask individual whether he/she notices any movements in mouth, face, hands, or feet. If yes, ask to describe and to what extent they currently bother individual or interfere with his/her activities.
4. Have individual sit in chair with hands on knees, legs slightly apart, and feet flat on floor. (Look at entire body for movements while in this position.)
5. Ask individual to sit with hands hanging unsupported. If male, between legs, if female and wearing a dress, hanging over knees. (Observe hands and other body areas).
6. Ask individual to open mouth. Observe abnormalities of tongue movement. Do this twice.
7. Ask individual to protrude tongue. Observe abnormalities of tongue movement. Do this twice.
8. Ask individual to tap thumb, with each finger, as rapidly as possible for 10-15 seconds; Separately with right hand, then with left hand. Observe facial and leg movements.
9. Flex and extend individual's left and right arms (one at a time). Note any rigidity.
10. Ask individual to stand up. Observe in profile. Observe all body areas again, hips included.
11. Ask individual to extend both arms outstretched in front with palms down. Observe trunk, legs, and mouth.
12. Have individual walk a few paces, turn, and walk back to chair. Observe hand and gait. Do this twice.



Functions:

1. Controls body activities
2. Coordinates body activities.
3. Carries impulses to and away from the brain.

The Nervous System

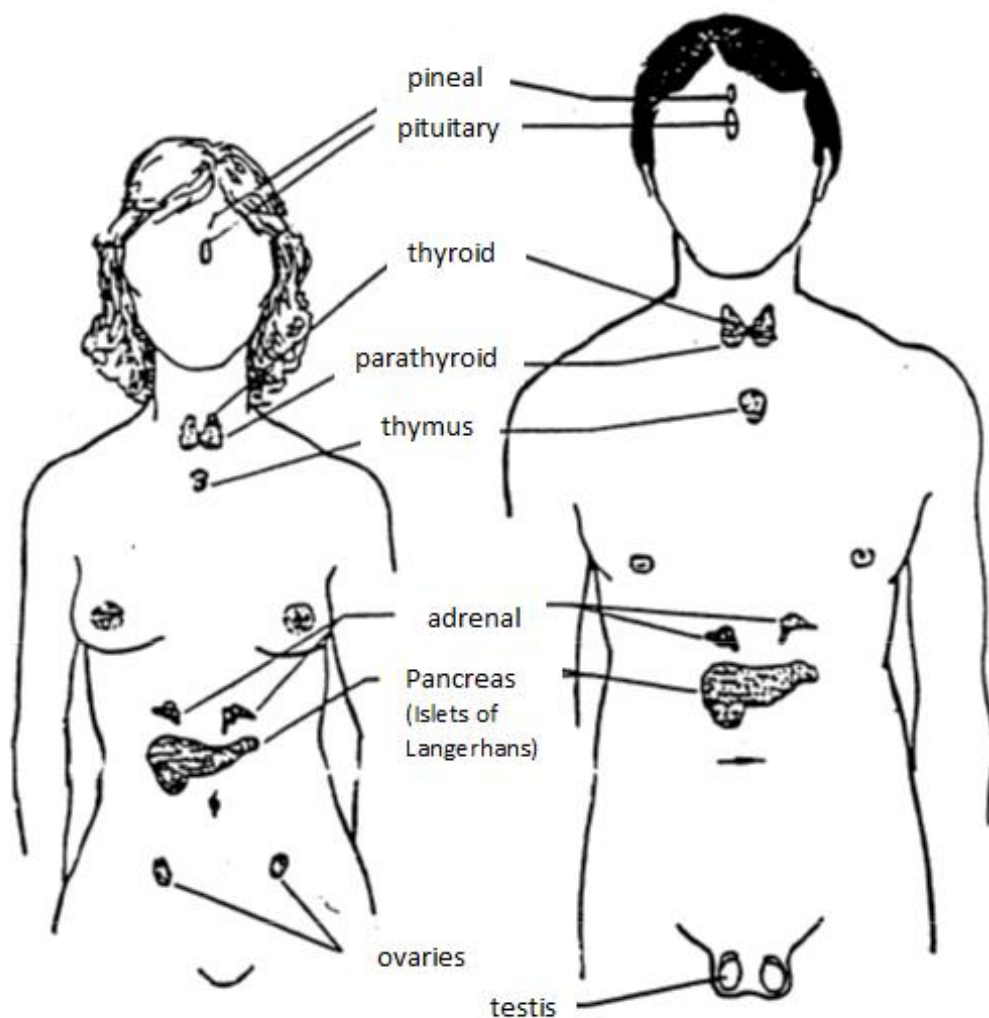


Function:

1. Controls body activities
2. Coordinates body activities
3. Carries impulses to and away from brain

The Endocrine System

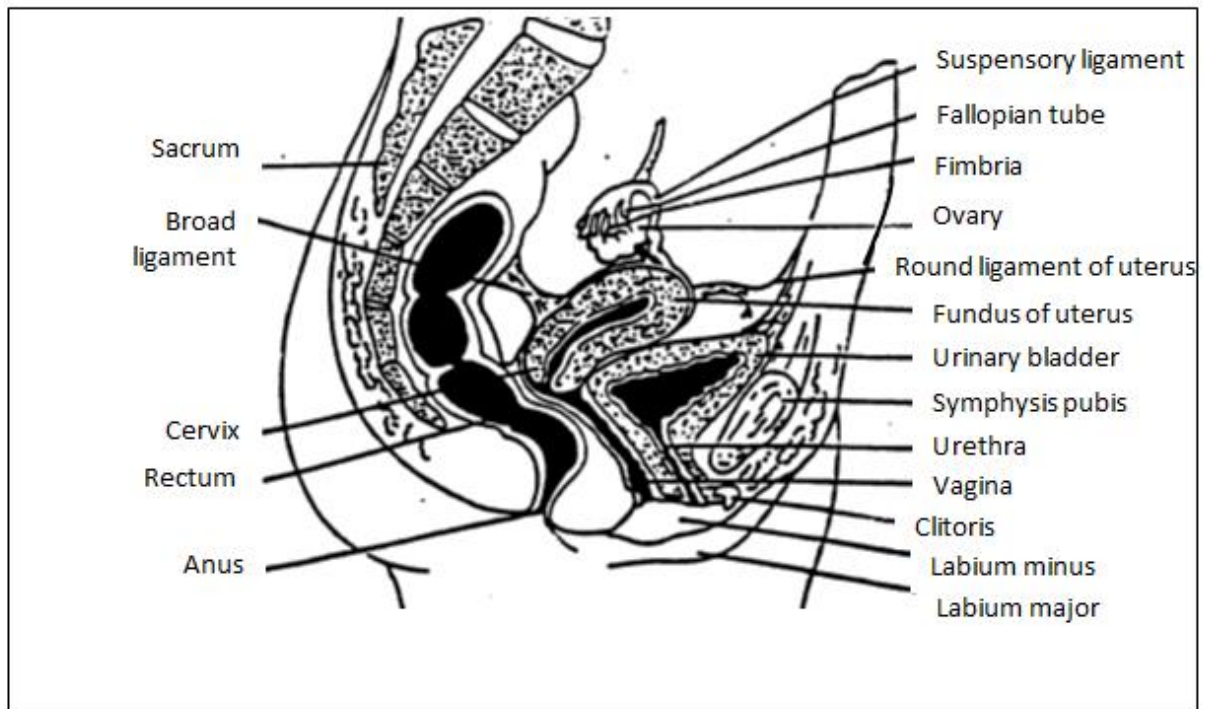
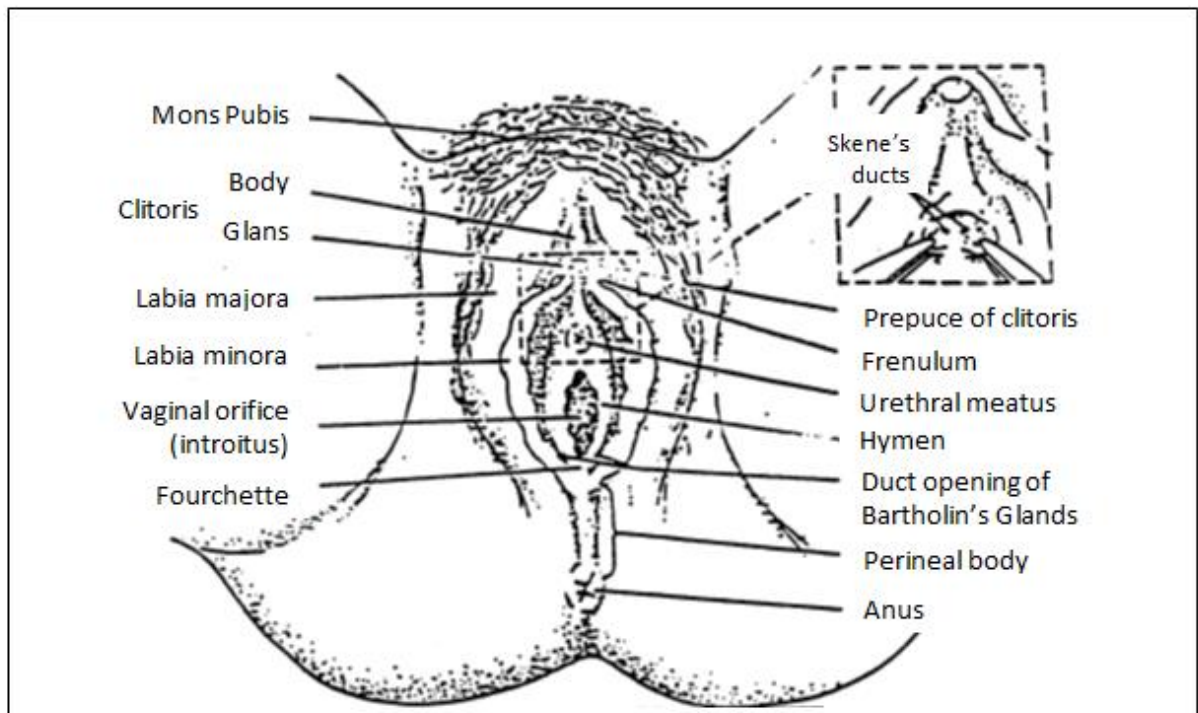
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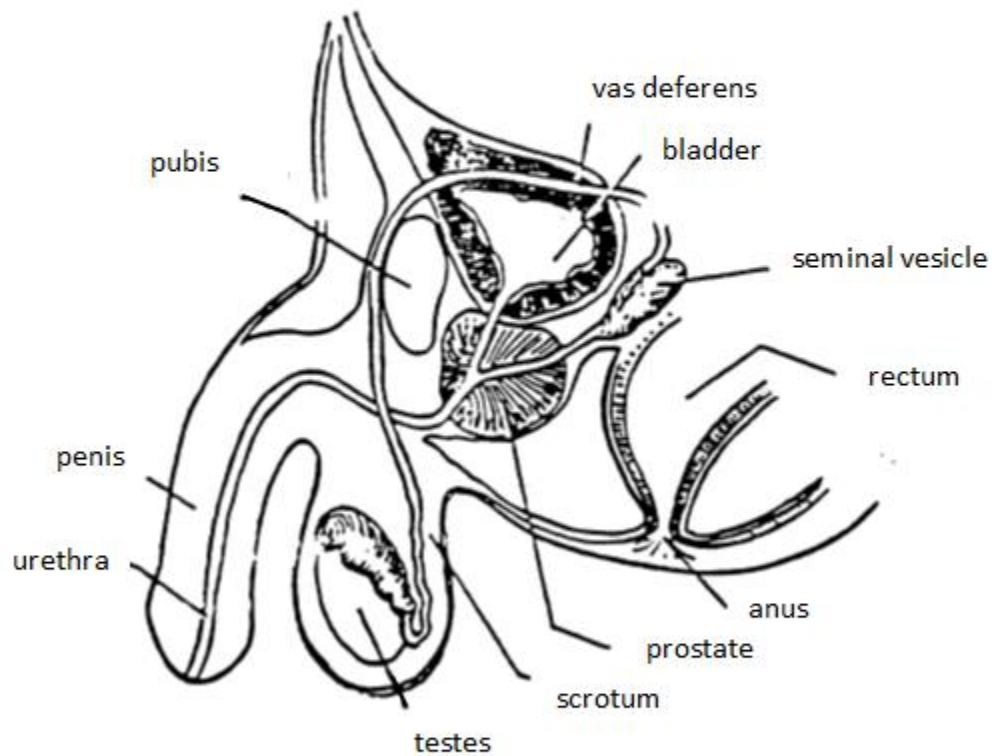
Function:

1. Secrete hormones to regulate body processes of growth and development
2. Regulates body functions, metabolism, and reproduction

FEMALE ANATOMY



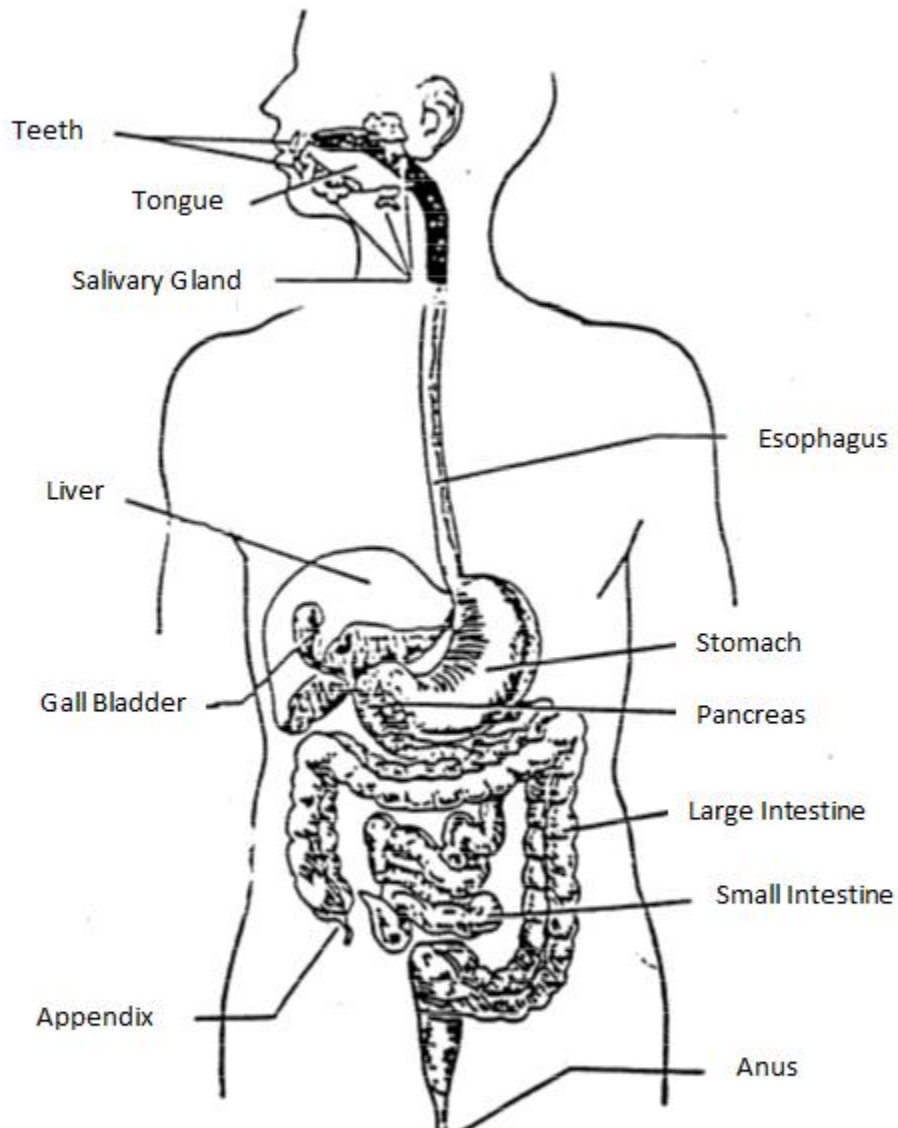
The Male Reproductive System



Function:

1. Produces male hormones
2. Produces male sex cells

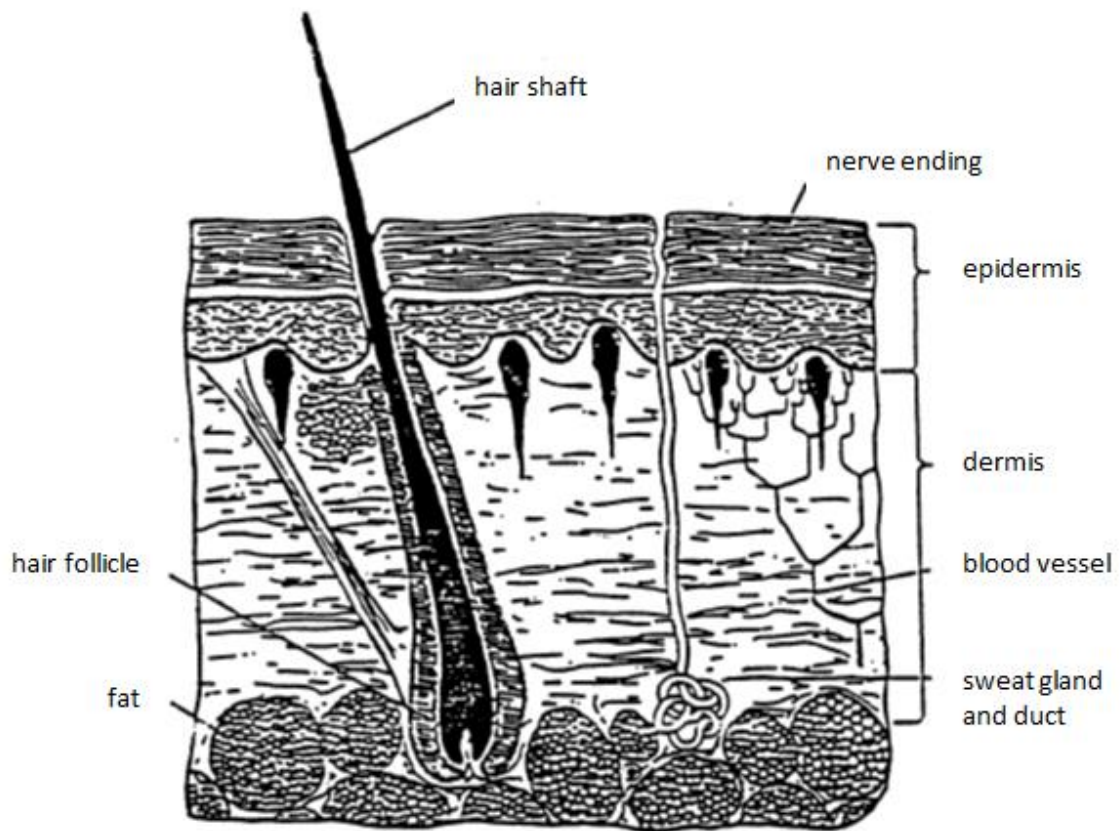
Gastrointestinal System



FUNCTIONS:

1. Ingests food
2. Prepares food for use by the body
3. Excretes wastes

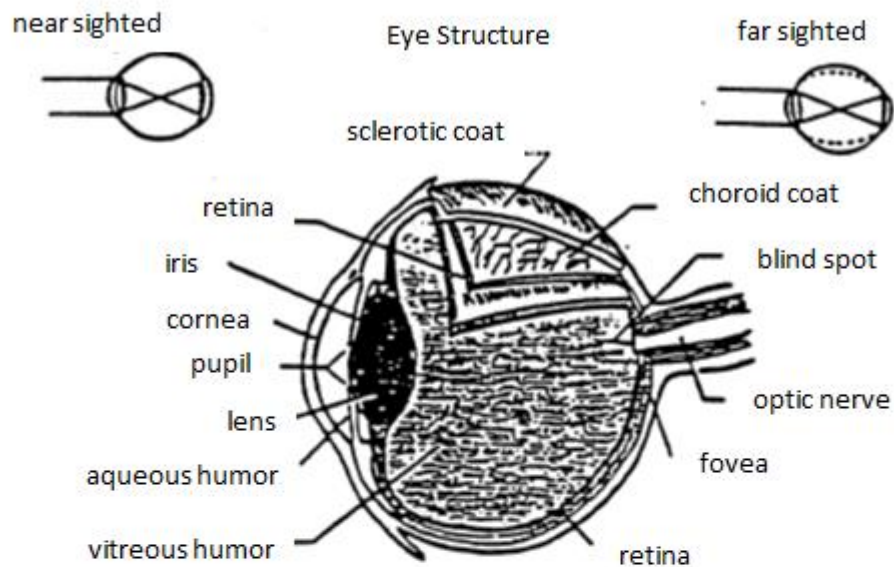
The Integumentary System



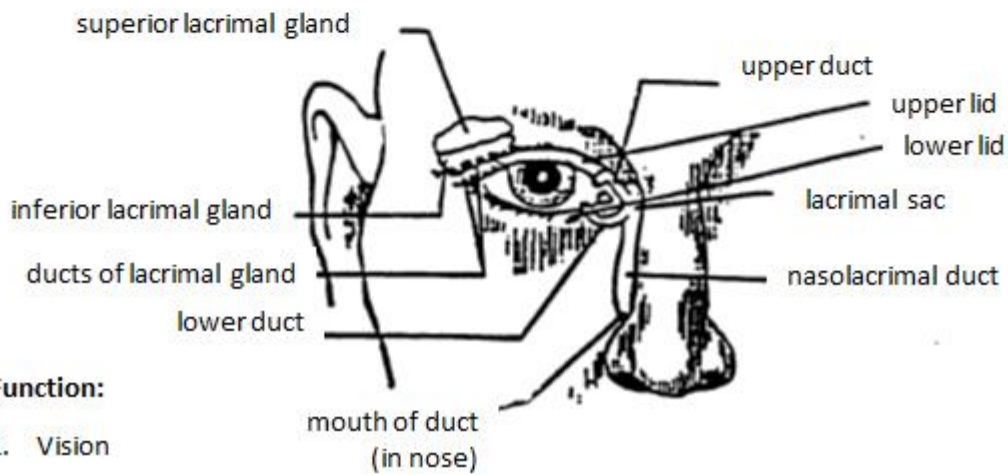
Function:

1. Protects the body
2. Regulates temperature
3. Discharge waste
4. Manufactures vitamin D
5. Makes human appearance presentable

The Sensory System

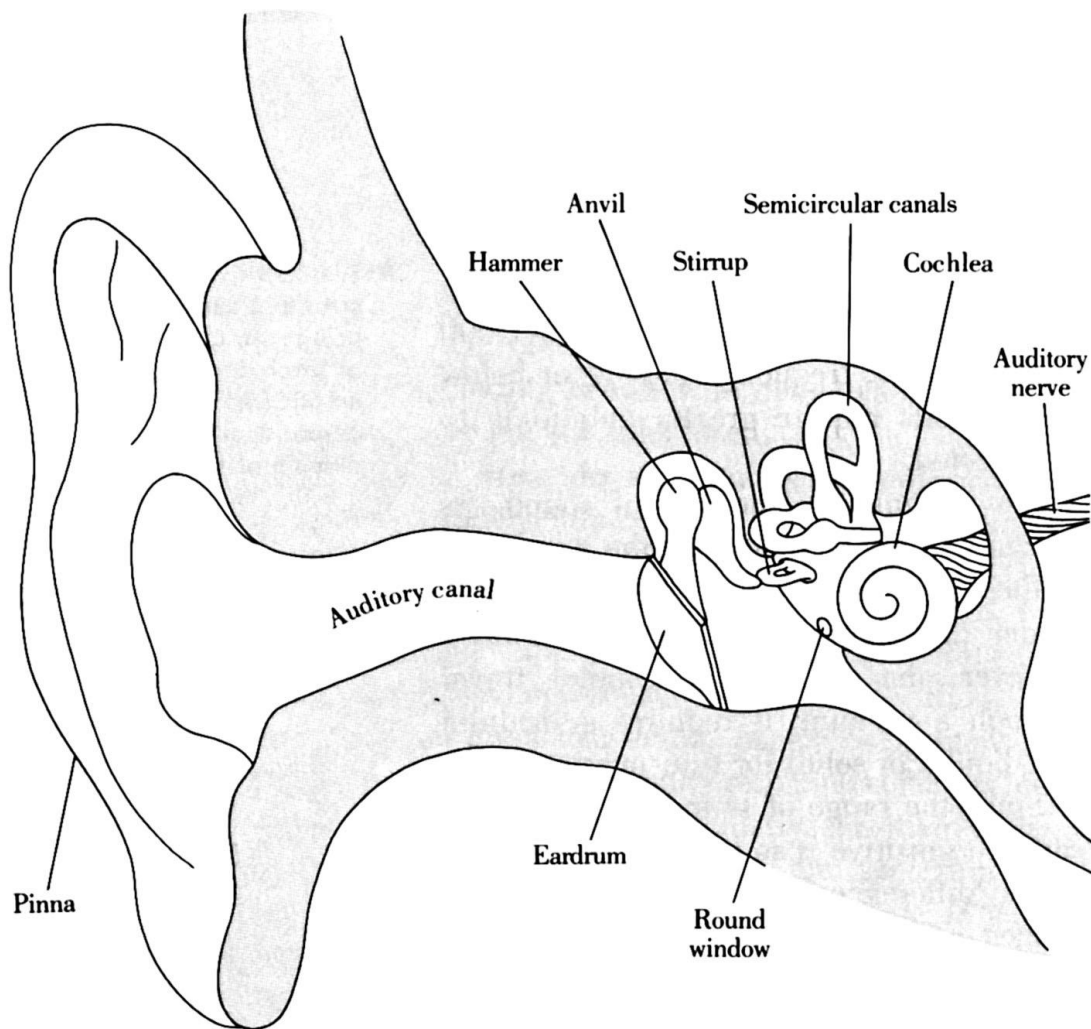


Lacrimal Apparatus



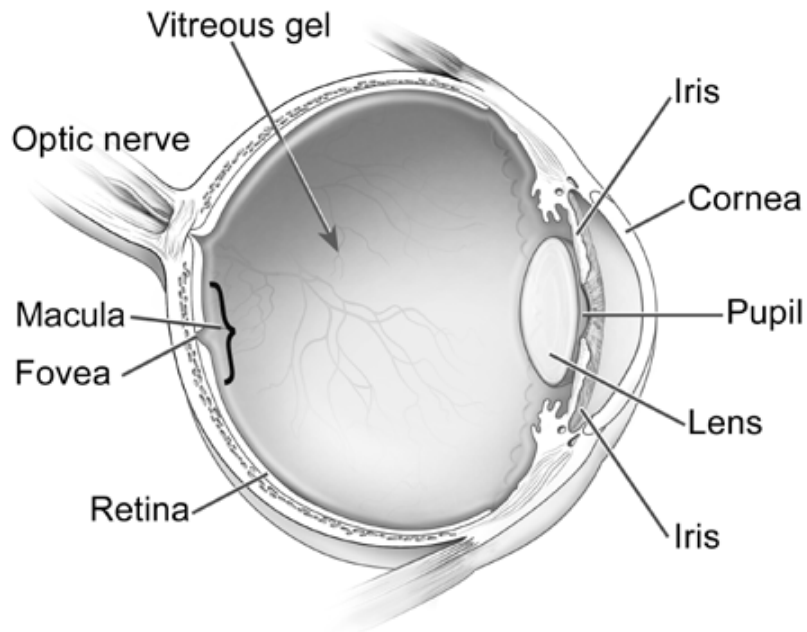
Function:

1. Vision



THE EYE

INTERNAL STRUCTURE



EXTERNAL STRUCTURE

