Section 4:
Nursing Process and Considerations for Drug Therapy

NURSING PROCESS
The nursing process is central to all nursing actions and applicable to all settings and methods of client care. Because the nursing process is flexible, it adapts readily to many variables and any conceptual framework one may use in clinical practice. An accurate and systematic application of the nursing process will increase one’s expertise and efficiency assessing clients, determining their need for drug therapy, and evaluating the results of this therapy. The nurse’s knowledge and understanding of a client’s medical condition, the use of medication to improve a client’s physical and/or mental health, and determining the extent of the efficacy of this therapy are critical to appropriate nursing care of those who require medication. The nursing process becomes an integral part of drug therapy as the process is applied to assess the needs of clients when medications have been prescribed.

Assessment, problem identification, planning, intervention, and evaluation, all components of the nursing process, are important steps in determining if clients need medication. Utilizing the nursing process to record data about a client’s response to therapy provides the information necessary to determine how well a client is responding to the prescribed therapy. Consistent adherence to the components of the nursing process tends to reduce the possibility of omitting an important finding in the overall condition of the client. It is also important to teach clients and families to follow a similar format when they are expected to take responsibility for adhering to a drug regimen and to accurately report the client’s response to therapy.

Assessment and Problem Identification
In the assessment phase a nursing diagnosis or problem is identified. Many diagnoses apply to knowledge deficits related to the need for medications, the method or technique for administration, and recognition of therapeutic response. Other diagnoses may apply directly to the client’s problems or needs. Based on the information gathered from the assessment, the provider then plans the nursing interventions that must be performed to attain the intended goal. The planning phase also involves identifying the specific actions one must perform to administer the medication safely and appropriately. Evaluations involve criteria used to determine if the goals were met. Specific, measurable, clearly stated goals make it simple to determine whether the intended outcomes have been achieved and to what degree. Evaluation involves the review of several areas, including compliance, client learning/understanding, therapeutic drug response, and evidence of side effects. The evaluation phase permits the provider to determine if, in fact, goals were met, and also measures the effectiveness of nursing care.
Assessment involves systematically collecting data concerning the client’s current health status. This includes labs to verify kidney or liver function as indicated, cultures, hematologic function, etc. A nursing history is performed to establish the database that is used later to plan and implement client care. It includes interviewing clients or significant others, physically examining them, performing a medication and allergy history, recording observations, determining a client’s knowledge of his or her condition and prescribed drugs, assessing the client’s emotional state, and, whenever possible, comparing the information with what is known about the client’s prior condition. With a medication history, all prescription and over the counter drugs and home remedies or herbal products should be listed. Present use or past history of drug and/or alcohol use or abuse is ascertained as well as the amount of caffeine consumed, and current smoking history. Any allergy should be noted and addressed because there are many cross-allergies between drugs as well as between drugs and foods. Assessment also includes socioeconomic factors that can have a significant bearing on whether a client will comply with the prescribed drug regimen and what may be essential to promoting compliance. The provider should identify the client’s physical state, any mental conditions that could affect the client’s ability to adhere to the prescribed drug regimen, and possible socioeconomic problems that may need to be addressed to ensure the best possible therapeutic outcome. Homelessness, poverty, and lack of adequate health insurance play critical roles in how well a client can be expected to comply with prescribed medication therapy. Environmental factors such as client lifestyle and the use of alcohol, nicotine, recreational drugs, and caffeine should also be addressed. Assessment should include the determination of any ethnic beliefs concerning illness, nutrition, and drugs that could interfere with compliance or influence client/family teaching.

Planning
Once problems have been identified, goals are set mutually and prioritized. Prescribed drug therapy is discussed with both the client and family. They should also understand the purpose for using the drug, signs of physical or mental impairment to observe, and evidence of any side effects that should be reported and may necessitate cessation of therapy.

Intervention
Nursing interventions refer to the actions, precautions, and teaching that must be considered by the nurse when administering a particular drug. The nurse is not merely a drug dispenser blindly following the provider’s orders; rather nurses are professionals who use knowledge of physiology, pathology, sociology, nursing, psychology, and pharmacology as they work with other members of the health care team for disease prevention and safe administration of drug therapy. Nurses are legally accountable for their practice and must possess a working knowledge and understanding of all the medications being dispensed to their clients.

The following actions are related to all types of drug therapy. They will be repeated selectively in the discussion of particular drugs to reinforce the importance of specific nursing interventions related to a classification of drugs or to an individual drug.
1. Check the medication order, card, or medication administration record with the original order. Check for client name, date of order, drug name, drug dosage, route, time and method of administration, and diet. Verify that the order is not outdated by reviewing facility policy (automatic stop dates/orders).

2. Check if the client is scheduled for any diagnostic procedures that preclude administration of certain medications (e.g., GI series, FBS, CAT scan). Withhold medication and check with the provider as indicated.

3. Check the *Nurse’s Drug Handbook* for physiologic action, therapeutic use, side effects, contraindications, drug interactions, nursing considerations, and recommended dosage for those drugs not already known. When necessary, use other references such as *Facts and Comparisons, AHFS Drug Information*, a computerized formulary service, a PDA download, as well as the accompanying drug literature. Consult with the pharmacist and request the drug monograph if the drug is not listed in reference books or is being administered for research purposes (requires informed consent signed by the client).

4. Select the specific drug prescribed. Substitutes are neither acceptable nor legal. Note contraindications to interchange of brands because of potential bioavailability differences among products (e.g., phenytoin, interferon alfa-2a, warfarin).

5. Check that the dosage of the drug is within normal limits. If the dosage is not within normal limits, withhold the drug and discuss the safety of the dosage with the provider. Request written clarification and administration guidelines if the dosage is not within normal limits. Note also the height, weight, and age of the client. Older adult clients often react differently to standard drug dosages, requiring less medication than others. Determination of the body surface area (BSA) can offer a more accurate parameter for proper dosage calculation.

6. If the client is female and sexually active, there may be a possibility of pregnancy. Not only does pregnancy often alter the effectiveness of some drugs, but because most drugs cross the placental barrier, there is potential for harm to fetal development.

7. Prepare the specific dose ordered. If the strength of the solution or tablet on hand is not suitable for exact measurement, and you do not have unit dose, consult the pharmacist about availability of another strength. If a more appropriate strength is not available, notify the provider who may adjust the dosage so that the medication can be measured specifically for proper administration.

8. Unless contraindicated, soluble tablets can be crushed and dissolved in a small amount of fluid for clients who are unable to swallow tablets. Alternatively, an elixir may be provided by the pharmacy. Syrups and elixirs should not be given routinely to diabetic clients without approval because of the high sugar and alcohol content in these preparations. Tablets can be crushed and administered with a small amount (1 teaspoon) of strained fruit unless contraindicated. Enteric-coated and sustained-released medications should not be crushed or chewed.

9. When preparing and administering drugs, continually assess the client’s name, age, allergies, and any other data that can affect drug administration, e.g., ethnic background, religious preferences, diet, medical history, diagnosis, level of consciousness.
10. Ascertain that appropriate diagnostic and baseline tests have been completed before initiating therapy (e.g., cultures should be obtained before antibiotics are administered). Review results of these tests and report any abnormalities.

11. Two forms of identification are now required when administering medications (e.g., check the client’s ID band and have the client state his or her birthday). If hospitalized or in an emergency room or similar facility where name bands are used, this should be checked or scanned as well. Check that the ID band correctly identifies the client, especially if the client has cognitive deficits or is comatose. If someone who knows the client is in attendance, have that individual identify the client and answer questions.

12. Assess the client’s emotional and physical state to determine his or her ability to receive the medication by the prescribed route. If the client cannot or will not tolerate the drug by the route prescribed, withhold the drug and consult with the provider who may then reduce the dose, withdraw the drug, change the route, or order another drug. Do not omit therapy unless the provider concurs.

13. Consider lab test interferences when selecting a method of testing and when using test results as a guide for administration of a medication (e.g., fasting versus nonfasting glucose determinations; drug levels when drug has just been taken).

14. Consider the known pharmacokinetics (e.g., absorption, distribution, metabolism, and excretion) of a drug to maximize its therapeutic effect.

15. Administer drugs as close to the designated time ordered as possible. The recommended limits are one-half hour before or one-half hour after the designated time. Drugs ordered a.c. should be given 20 minutes before the meal. Schedule drugs and administer them at times that will maximize their therapeutic effectiveness while minimizing their side effects (e.g., administer diuretics in the morning so that diuresis will be completed before bedtime unless the client prefers to get up at night to urinate due to daytime appointments or busy schedules; give with food or fluids or on an empty stomach).

16. Chart all fluids taken with drugs if I&O is monitored. Provide only liquids allowed on the diet. If working with clients being treated at home who retain fluids, teach them or family members how to monitor fluid I&O. Instruct clients to weigh themselves daily at the same time (generally before breakfast), on the same scales, wearing the same type of clothing, and to maintain a record of those weights. This record should be maintained for provider review at all visits. Also, instruct the client to report any symptoms associated with fluid retention, such as increased dyspnea, sudden weight gain, or swelling of the lower extremities.

17. Remain with the client until oral drugs have been swallowed. Do not leave unattended or for later ingestion.

18. Use your knowledge of desired effects, side effects, and drug interactions to assess for positive and negative outcomes of therapy; document and report these observations. Side effects may necessitate withholding the drug, changing the therapy, or initiating emergency actions.

19. Document/confirm the administration of the drug and any related assessments immediately after administration (or if drug was withheld) to prevent duplication and errors resulting from omissions.
20. Review administration techniques and provide information necessary for successful administration of drugs in the institution or at home. This communication/interaction is essential to promote client compliance with the prescribed drug therapy. Include the trade and generic drug names, dosages, times for administration, side effects (identify ways to minimize when applicable (e.g., take with food to reduce GI upset), symptoms that require immediate medical intervention, duration of therapy, what to do if drug is omitted, and the expected outcome.

21. Many clients have difficulty with vision, hearing, reading, and mobility. Innovative methods to assist with medication administration can help to maintain the desired level of independence (e.g., preset insulin syringes; weekly pill box filled by nurse; talking pill bottles; easy-open containers; a poster identifying the medication to be taken, including the amount, frequency, and route, as well as the medication itself with large print instructions).

22. Understand that ethnic background can alter a client’s attitudes and values toward drug therapy and illness and could ultimately affect compliance with prescribed regimens.

**Evaluation**

In the evaluation phase of the nursing process the outcome of each assessment/intervention is reassessed for effectiveness or resolution of problem. Reports from the provider, client, family, and other health care providers are considered. Assessing and reporting both therapeutic and adverse reactions to drugs provide critical and essential data that influence further drug therapy, or signal the need to reduce or discontinue therapy. Some evaluation criteria are very specific, such as serum drug levels for digoxin or vancomycin therapy. Serum levels above or below therapeutic range can identify why the desired results have not been attained. Other evaluation criteria may require assessments over an extended period of time, such as with the administration of growth hormone in those with a documented deficiency. These individuals may require monthly height and weight determinations with biannual wrist x-rays to assess the effectiveness of this particular drug therapy. Finally, other evaluation criteria rely on subjective reports from the client, such as with allergy-induced nasal congestion. In this setting the provider may prescribe an antihistamine. The client will determine and report if the drug has been effective relieving the symptoms of nasal congestion. Also in the area of pain control, after the pain medication has been administered, the nurse should check back with the patient, usually within 1 hr, to determine if the client has gained pain relief. This is done using a pain rating scale so that the results are measurable. Nursing evaluation should be specifically tailored to measure the client’s response to drug therapy and the resolution of specific symptomatology in order to facilitate this process.

Medication reconciliation should occur at all points of care, transfer, discharge, etc. to prevent medication errors.