"Increasing Safe Medication Practices in Older Adults: An Assessment of Needs and Educational Awareness"

by

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Abstract

As the population ages the risk of chronic illness increases, necessitating the acceptance of a long-term medication regimen. Increasing the numbers of daily medications may result in adverse drug reactions, unsafe medication practices, and non-compliance. Non-compliance, which can result in hospitalization, loss of independence, and death, remains an issue in medical, social, and psychology literature. Understanding the variables that contribute to non-compliance, while offering older adults continuing education on safe medication practices, may be a solution. Programs that encourage older adults to diagnose their learning needs and develop the learning climate can increase the feelings of self-efficacy necessary to practice the self-care behavior of medication compliance.
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Introduction

Statistics reveal that elderly people are the fastest growing segment of the population. By the year 2000, thirty-five million will be 65 and older; the number will increase to sixty-four million by 2030 (Wolfe & Schrim, 1992). The aging process increases the risk for chronic illness requiring complex daily medication regimens. These regimens may result in non-compliance and medication-related problems in older adults. Continuing education emphasizing safe medication practice is essential to minimizing medication non-compliance and related problems. Eighty percent of the aged population are affected by at least one chronic condition such as diabetes and/or arthritis. Chronic conditions follow some elderly into old age while others develop chronic problems as a result of age-related changes (Ebersole & Hess, 1994; Milkulencak, 1992).

Living with chronic illness often necessitates the acceptance of a long-term medication regimen. As the number of medications taken each day increases, so does the risk of a drug interaction. Thirty-seven percent of older adults are taking five or more drugs a day. An older adult taking five medications a day has a 50% chance of a drug reaction, and the risk increases to 100% if eight pills a day are taken (Lilly Aucker & Albanese, 1996).

According to Wolfe and Hope (1993), Americans 65 and older fill 650 million prescriptions a year. Although older adults make up 12.5% of the
population, they take 38% of the prescription drugs at a cost of $14.3 million a year. Such complicated medication regimens contribute to serious problems: adverse drug reactions, non-compliance and unsafe medication practices.

Adverse Reactions and Related Problems

Yearly, 659,000 older Americans are hospitalized because of adverse drug reactions caused by a) taking more medication than prescribed, b) taking less than prescribed, c) being prescribed the wrong drug, or d) suffering a reaction to the correct drug and dose prescribed. Twenty-eight thousand of these adverse reactions were life-threatening due to toxicity from Digoxin, the most common form of digitalis older adults take to treat congestive heart failure and cardiac dysrhythmias (Wolfe & Hope, 1993).

Medications responsible for the most serious drug reactions in older adults are: drugs used to control blood pressure, drugs for abnormal heart rhythms, and drugs used for treating gastrointestinal problems (Wolfe & Hope, 1993). Physicians and patients may not realize that many symptoms in older adults can be caused or worsened by drugs. They may assume that common symptoms are simply signs of aging or disease.

Each year 32,000 older adults suffer hip fractures as a result of drug-induced falling. Blood pressure medications can cause a drop in blood pressure upon rising, resulting in a fall. Each year 41,000 older adults are hospitalized and 3,300 of them die from gastrointestinal hemorrhages caused
by non-steroidal anti-inflammatory drugs like Ibuprofen which is sold over the counter (Wolfe & Hope, 1993). The problems of non-compliance, unsafe medication practices, and adverse drug reaction in older adults are often the result of overprescribing, misprescribing, and poor communication between physician and patient (Wolfe & Hope, 1993).

Non-compliance

Compliance is a term derived from a medical perspective defined as "the extent to which a person's behavior (in terms of taking medications, following diets, or executing lifestyle changes), coincides with medical or health advice" (Haynes, Taylor & Sackett, 1979; pp. 1-2). The past two decades have seen compliance become a dominant issue in the medical, social and psychology literature. Compliance research has focused on the rates of compliance, attempts to predict the reasons for non-compliance, and attempts to alter the rates of compliance and non-compliance (Roberson, 1992; Vivian, 1996).

Cargill (1992) and Salzman (1995) maintain that non-compliance is no greater in an elderly population than it is in a younger population. In general, older people take more medication to treat chronic conditions. Labeling a person as non-compliant may be non-productive unless it is considered a symptom of an underlying problem to be addressed (Matteson & McConnell & Linton, 1996).
Unsafe Medication Practices

Ascione (1994), Esposito (1995), and O'Connell & Johnson (1992) proposed that patient education, increasing knowledge about the purposes of medication as they relate to individual disease processes, may reduce unsafe medication practices. Knowing proper drug dosage and drug side effects may prevent hospitalization due to drug-induced illness. In a study conducted by Col, Fanale and Kronholm (1990), 315 elderly people were interviewed after being admitted to an acute care hospital. Eighty-nine of the elderly were admitted as a result of a drug-related problem, and 36 of the elderly admissions were the result of medication non-compliance. The total cost for the 36 hospitalizations was $77,000 or $2,150 per older person in 1990 dollars. Other studies identify non-compliance with a medication regimen as a major reason for drug-related hospitalization (Grymonpre, Mitenko, Sitar, Aoki & Montgomery, 1988; DeGeest, Borgermans, Gemoets, Abraham, Vlaminick, Evers & Vanrenterghem, 1995; Johnson & Bootman, 1995).

If clients do not understand why a medication has been prescribed and how to take the medication properly, unsafe practices may be the result. For example, a well-informed client is less likely to make errors and misinterpret directions (Williford & Johnson, 1995; Bowles, 1996; Swiatzik & Williams, 1991). Education will also help to decrease health care costs while increasing the quality of life which is a major concern for those involved in health care
delivery (Esposito, 1995). Identification of education needs of an older population about medication is important in maximizing limited resources (Marion, Jewell & Silverman, 1995).

Existing Community resources that serve seniors may have identified some medication-related education needs. Completing an inventory of what aging services and programs in a local community are doing to address the issue of medication safety can avoid duplication. Thus, an inventory of medication education programs may reveal areas that need further exploration and development.
Purpose of the Project

The purpose of this project is to:

1) conduct a review of the literature on the topic of safe medication practices in older adults, along with adult education issues that relate to learning in older adults;

2) address weaknesses and deficiencies in selected educational programs available in Salt Lake County, Utah;

3) develop a multidisciplinary educational workshop and seminar on safe medication practices and compliance for professionals who will be working with older adults.
Chapter I

Literature Review/Theoretical Framework

Elderly people living in the community are typically responsible for their own medication-taking practices. The responsible use of therapeutic drugs has the potential to extend life and quality of living. However, there exist factors which influence safe medication practice. These factors are as complicated and individualized as the elderly who are a heterogenous group with complex health problems. The rate of changes in various organ functions and metabolic change is different for each older adult, so drug therapy is a matter of individual prescribing (Vestal, 1992).

There are extrinsic (outside influences) and intrinsic (internal factors) affecting an older person’s medication regimen. Intrinsic factors include: impaired vision, hearing, and memory. There may be a decrease in drug metabolism and excretion. Extrinsic factors include: limited income, inadequate medication instruction, and a complex medication regimen (Shrimp & Ascione, 1988).

A review of current literature relevant to the factors influencing safe medication practice is important and provides a basis for the proposed workshop/seminar.
I. Variables That Impact Safe Medication Practices

A. Age-Related Changes

1. Metabolism

After a drug is taken by mouth, it is absorbed into the bloodstream and passes into the liver where metabolism of the drug takes place. The role of metabolism differs from one older person to another. Normal aging and disease such as atherosclerosis decreases blood flow to the liver, prolonging hepatic clearance. A slow metabolism allows the drug blood levels to increase and circulate for longer periods (Lipton & Lee, 1988; Lilly, Aucker & Albanese, 1996).

2. Absorption

A gradual reduction in hydrochloric acid alters the absorption of drugs like aspirin and barbiturates. A reduction in blood flow to the stomach caused by disease such as atherosclerosis affects absorption. By age 65 there is a 50% reduction in blood flow to the gastrointestinal tract. Absorption of either nutrients or drugs is dependent on adequate blood flow (Lilly, Aucker & Albanese, 1996; Shannon, Wilson & Stang, 1995).
3. **Distribution**

After a drug is absorbed into the gastrointestinal tract and passes through the liver, it is distributed to the cell. How well a drug is distributed is affected by a person's body composition. Body composition is the result of 1) lean body mass; 2) body water, and 3) adipose tissue mass. Body mass varies with each individual and is affected by gender, age, nutrition and disease. As a person ages, adipose tissue (fat) mass increases and muscle mass decreases. Total body water is 10 to 15% less in an elderly person than a younger person, leaving less water in which to dilute drugs. The increase in body fat allows drugs distributed to fat such as sedatives to have a prolonged effect (Lipton & Lee, 1988; Lilly, Aucker & Albanese, 1996).

4. **Excretion**

Drugs that enter the body must be eliminated eventually. The kidney is the main route for this elimination. Renal function decreases with normal aging. A reduction in blood flow to the kidney caused by age and disease results in a 40 to 50% reduction in glomerular filtration. The result is delayed drug excretion and drug accumulation. Renal function varies with
each individual and should be monitored frequently to ensure appropriate dosing (Lilly, Aucker & Albanese, 1996; Shannon, Wilson & Stang, 1995).

5. **Hearing**

Hearing loss of some kind affects one-third of adults 65 to 74 and one-half of adults 75 to 79. Hearing impairment is a problem for ten million older adults. Loss of hearing threatens a person's security and self-esteem (Guyla, 1995). A common sensorineural hearing change with aging is presbycusis, the gradual loss of a person's ability to perceive sounds (Teague & McGhee, 1992).

When an older person cannot hear what a physician or pharmacist is saying about medications, unsafe medication practices could result. If the older person lives alone with no one to monitor medications, instructions from a physician or pharmacist may be misinterpreted. The misinterpreted instructions may continue until the older person's next office or pharmacy visit (Stack, Beers, Steiner, Aronow, Rubenstein & Beck, 1994).

Medication directions given by a physician or a pharmacist to an older adult in rapid fashion using medical
jargon may result in non-compliance. It takes longer for an older person to process information and hearing loss exacerbates the problem. Eliminating background noise and facing the older adult while giving directions in a culturally appropriate language and manner can increase compliance (Ebersole & Hess, 1998).

6. **Vision**

Decline in visual acuity is a progressive change all individuals will experience as they age. The inability of the eye to accommodate to close, detailed work begins in the fourth decade (Teague & McGhee, 1992). By age 40, a person may need to hold an object further away to focus his gaze. The name for this change is presbyopia or farsightedness. Reading the label on a bottle of medication may be difficult (Cornish, 1992). Written information given to an older person should be in large, bold print (Ebersole & Hess, 1998).

As a person ages vision may be affected, limiting the ability to drive. Getting to the pharmacy to fill a prescription becomes more difficult. Many pharmacies no longer deliver, and those that do may require payment for delivery. Assessing an older person's ability to fill the prescription should be a
routine part of the prescribing behavior (Matteson & McConnell & Linton, 1996).

The inability to distinguish between colors begins in the sixth decade. By the eighth decade clarity diminishes by 59%. An older adult has more difficulty telling the difference between blues, violets and greens, while colors like red, orange and yellow are more easily seen (Ebersole & Hess, 1998; Lamy, 1986). Therefore, distinction between medication of different colors may be difficult.

B. Cost of Medications

Economics influence medication-taking behavior by the elderly. In 1991, 45% of the elderly over age 65, had no insurance for prescription drugs (Long, 1994). Medication costs are escalating, creating problems for individuals living on a fixed income. Insufficient funds was the primary reason given for non-compliance with medications in a study by Klukowski (1992). In 1991 the average yearly prescription cost for Americans 65+ was $520. This is expected to double by the year 2005 (North Carolina Department of Health and Human Services, Oct 1997). Underuse of medication as a result of cost is a significant problem.
Elderly may neglect to purchase needed medications resulting in a poor health outcome (Soumerai, Ross-Degan, Avorn, McLaughlin & Choodnovskiy, 1991). A fixed income forces many elderly to make decisions about what medications they can or cannot afford. Older patients may forego treatment with certain drugs, such as iron for anemia, to purchase their heart medication. Older clients who believed their medications too expensive had higher rates of non-compliance (Salzman, 1995). Two of the ways older adults manage drug costs are: a) they take medications only when they feel it was really needed, and b) they take less than prescribed so the medication will last longer (North Carolina Department of Health and Human Services, Oct 1997).

One of the most troubling gaps in Medicare health insurance is the lack of coverage for prescription drugs. It is estimated that 1% of the elderly spend a quarter of their income on prescription drugs. Elderly people with a chronic condition, such as heart failure or diabetes, have a financial burden two and one-half times as high as elderly individuals without a chronic condition. The financial burden for elderly women is 20% higher than it is for men as a result of lower incomes and poor retirement benefits (Rogowski, Lilliard & Kington, 1997).
If economic factors are identified as a risk factor, identifying strategies to assist the older client with reducing the cost of prescription drugs becomes paramount. For example, the American Association of Retired Persons offers a mail order prescription service (AARP, 1998). Costs are low due to high volume participation (AARP). A publication available from the United States Senate Special Committee on Aging explains how pharmaceutical companies make some prescription drugs available (June 1997). These medications are free of charge for a limited time period to needy patients, based on criteria specific to each pharmaceutical company. Physicians are able to contact the drug manufacturer for the patient. Physicians receive samples of medications from pharmaceutical companies. Older clients need to be empowered to ask their physician for a trial of a medication to ensure its efficacy before they commit a substantial amount of money to a prescription that may need to be changed. Professionals working with elderly patients have an obligation to inform their clients of this benefit. In addition, many elderly people are not aware that many prescription drugs are available in generic form and purchasing these drugs in this form can result in substantial savings on many prescriptions.
C. **Number of Medications**

The geriatric population takes multiple medications on a daily basis. One-third of the people over age 65 take eight drugs a day for one or more chronic conditions. Polypharmacy increases the risk for adverse drug reactions and hospitalization (Lily, Aucker & Albanese, 1996).

As a group, the elderly take more medications for a longer period of time. Increasing the number of drugs taken each day may increase the number of doses taken in a 24-hour period. Some medications are taken twice a day, while others may be on a schedule of three times a day. The task of adherence becomes more difficult with each additional drug (Botelho & Dudak, 1992).

The number of drugs a patient takes per day significantly increases the likelihood of a drug-drug interaction. As the number of drugs increase and the therapy becomes more complex, an older person’s ability to understand the therapy is diminished (Kimberlin, Bernside, Pendergast & McKenzie, 1993).

D. **Prescription Labels**

Prescription labels have information typed in small print in a very small space, leaving little room for any warning stickers. Directions are difficult for the average older adult to decode (Ebersole
& Hess, 1998). Pharmacists should determine the patient’s ability to read important details on the label before the patient takes the medication home. If label information is misinterpreted, the individual may be taking the wrong dose, increasing the risk for drug-related problems (Murray, Darnell, Weinberger & Mantz, 1996).

E. Physician-Patient Interaction

The term compliance has been criticized as being paternalistic. The one-way communication emphasizes an active physician and a passive patient in a provider dictated approach where compliance is the expected outcome (Vivian, 1996). Better communication between patient and clinician in respect to therapeutic intervention is related to increased patient satisfaction and improved health outcomes such as compliance (Walker & Waddington, 1991: Barnett, 1994).

A study by Mullett & Coughlin (1998) found that seniors would like more information from their physicians concerning their medications but feel their physician is not knowledgeable on the subject. Failure of a physician to share knowledge about medications with patients may interfere with the patient’s attempts at self-care and compliance with drug regimens. Studies show a physician interrupts the patient’s explanation of their health problem an average of 18 seconds into the health interview, and that 45% of patients’ concerns
are never disclosed, and many psychosocial and psychiatric problems are missed (Stewart, 1995).

An effective physician-patient relationship is one in which the physician devotes the necessary time for self education and patient education. The patient's values, preferences and underlying fears are considered and patient responsibility in decision making is encouraged. Educated patients practice good health habits, reducing the cost of care (Balint & Shelton, 1996).

F. Nurse-Patient Interaction

Nurses who view themselves as educators teach older clients how to care for themselves by dealing with obstacles that make compliance difficult. A collaborative model of care recognizes patients as necessary partners in any discussion about care and compliance. When an individual's dignity and volition are maintained, patients participate in compliance decisions and higher levels of medication compliance are achieved (Vivian, 1996).

Physician office appointments are brief and focus on the immediate medical problem. The nurse's knowledge base about pharmacology, behavior, interviewing and counseling puts them in a unique position to identify high risk patients. After identifying any
problems related to medication safety, a plan of care can be developed (Cargill, 1992).

Noble (1991) emphasizes that knowledge about illness and health is no longer exclusive to professionals. Nevertheless, nurses possess knowledge about health matters that the lay person does not and can be regarded as an authoritative source of medical information. If the nurse is to be an effective teacher and do more than pass on facts, she must engage the client in learning. Effective education is the result of good assessment. Finding out what the patient wants and needs to know is key to teaching what a patient has to learn in order to deal with a real life task or problem.

G. Pharmacist-Patient Interaction

Today’s pharmacist provides care in drug therapy for the purpose of four outcomes (Hepler & Strand, 1990):

1. Curing the disease
2. Eliminating or reducing symptoms
3. Slowing the disease
4. Preventing a disease or symptoms

The pharmacist works with the patient to reach a therapeutic outcome. The pharmacist must recognize the patient’s limitations in functioning capacity and be ready to provide strategies. The burden of
responsibility is shared with the patient. The patient must provide a personal and medical history that could impact the therapeutic outcome (McPherson, 1993).

A pharmacist has an opportunity to talk to patients about their drugs. Patients who understand their illness and its treatment may be more compliant. The pharmacist has the responsibility to provide advice about the purpose or reason for the medication, what it can do, and how the patient is to use it. The patient should be encouraged to ask questions and be actively involved in care (Williford & Johnson, 1995).

A study by Hunter, Florio & Langberg (1996) revealed that including a pharmacist on the multidisciplinary team of a community-based care management program resulted in a positive outcome. The pharmacist assessed the older client's use of prescription and non-prescription drug use and misuse. Information obtained was linked with other members of the team and a care plan was developed for the client. Followup home visits by the pharmacist for the purpose of educating and counseling older clients on safe medication use was welcomed. Older clients viewed the team and the continuity of care as an important part of maintaining independence.
Drugs are often prescribed for older adults without the consideration of the unique characteristics that the aging process brings. Pharmacists as members of a multidisciplinary team play an important role in assessing and planning ways to help elderly individuals take medications properly (Hunter, 1996).

H. Complexity of the Regimen

Complexity of the regimen begins when the physician writes the prescription. The patient must take the prescription to a pharmacy to be filled (Morrow, Leiner, & Sheikh, 1988). Medication taking is a complex behavior influenced by a number of factors. Whether or not the older person fills the prescription depends on the ability to get to the pharmacy. After obtaining the medication the patient must take it home and take the correct dose at the right time (Morrow et al, 1988).

The more convenient and effective the regimen, the more likely adherence is to result. The more complex or costly the regimen and the longer it must be taken, the greater the risk of non-adherence. Many times a patient finds a regimen complicated, inconvenient, embarrassing, and expensive (Stephenson, Rowe, Haynes, Macharia, & Leon, 1993).
I. **Culture**

An individual's cultural group influences compliance. Two norms are involved: a) the family's health habits and beliefs, and b) the ethnic group's perspective on the cause of disease and its treatment. Family norms influence each person's beliefs about how severe the disease may be and how susceptible to the disease they are (Matteson & McConnell, 1988).

Ethnic influences are very strong in the elderly. Ethnic norms that influence eating problems, beliefs about causation of disease, and response to pain, can inhibit or facilitate appropriate health-seeking behavior (Matteson & McConnell, 1988).

Beliefs about the causes, diagnosis and treatment of illness varies with each culture. Ethnic groups may have beliefs and practices that conflict with those of their health care providers. Failure to include the beliefs and practices in a treatment plan may result in treatment failure (Jackson, 1993).

Elderly from ethnic minorities feel capable of dealing with their own problems within the context of family. Involving family members when teaching the older person about health-related issues can have a positive effect. The family can assist the patient in health care decisions and assist with basic needs (Evans & Cunningham, 1996).
Accurate geriatric assessment depends on good communication. If the health care provider cannot communicate questions or instructions in the culturally appropriate language of the elderly person, a trained interpreter or translator should be used. Family should be used as translators only as a last resort. Discussion of topics that are considered taboo, such as the breast, may cause a family member to feel awkward. If they feel the question may be demeaning to the elder, they may change the question, resulting in an inaccurate response (Yeo, 1996).

Limited English speaking ability impairs access to health care. Language barriers foster powerlessness by limiting life choices and ability to acquire knowledge that can enable a person to make decisions to access or use health care (Cohen & Rohali, 1993).

J. Living Alone

Socially isolated elderly may be at increased risk for drug-related problems. The absence of a network offering reassurance and support may result in the older person forgetting to take medication (Stoller, 1988). Women outlive men and may spend many years alone. Research shows that non-compliance rates are substantially higher among elderly people living alone with no one to assist them with their medications. Women living alone tend to have lower incomes but are
taking more medications than older men, resulting in higher medication costs (Salzman, 1995; Col, Fanale & Kronholm, 1990).

Successful compliance with a medication regimen may depend on the number of support people available for an older person. Family members and others who are able to oversee prescription filling and medication taking can increase medication adherence in the elderly (Ebersole & Hess, 1998).

K. Gender

In the female age group 65 and older, use of psychotropic drugs exceeds that of males by 60%. Psychotropic drug use is not confined to community-dwelling older women. Women in a nursing home setting are diagnosed more often than men as anxious and are prescribed tranquilizers (Lipton, 1988).

The burden of rising drug prices falls more heavily on elderly women who are living alone. Their out-of-pocket drug expenditures increase as their finances decrease. Some of the reasons for gender differences in drug use are: a) women are more likely to be prescribed drugs by professionals, and b) women have illnesses and problems amenable to drug therapy such as urinary tract infections, menopause and hypertension, and c) women live longer (Lipton, 1988;
II. Learning needs of the older adult:

Professionals working with older adults to develop safe medication practices and reduce non-compliance must be aware of the unique learning needs of older adults. According to John (1988), education and the opportunity to continue learning can improve the quality of life of elderly people. Many older people want to continue to learn and receive the fulfillment that comes from acquiring knowledge that may prevent health problems. Learning safe medication practices can improve compliance and reduce adverse drug reactions (Cargill, 1992). The results can be elderly people who remain active, self-sufficient and independent (John, 1988).

According to Knowles (1990), androgogy, the theory of adult learning, is based on the following assumptions:

A. The Need to Know

Adults want to know why they need to know something before they will attempt to learn it. Understanding how learning something will enrich their lives is important (Knowles, 1990). For satisfactory medication compliance to occur, the older adult needs to have adequate knowledge about the medical problem. How the medication will
impact the problem is information the patient must have before he/she can practice specific self-care behaviors (Turk, Salovey & Litt, 1986).

B. Learner's Self Concept

Adults' self-concept makes them responsible for their life decisions. Adult education must create learner experiences in which the learner is self-directed (Knowles, 1990). For behavior to be sustained, adults need to be reinforced until such time as they perform self-care behavior satisfactorily to their expectations and reinforcement is self-managed (Turk, Salovey & Litt, 1986).

C. Learner's Experience

Adults have lived longer and come to the educational activity with accumulated experience. Adult educators must tap into those experiences with techniques that encourage peer helping activities, group discussion and problem solving activities (Knowles, 1990). Those working with the elderly should ask the older people their perspective on their drug therapy and how they define the quality of their life and the quality of their drug therapy.

D. Readiness to Learn

Adults are ready to learn the things they need to know to cope with real life situations. Meaningfulness of the task affects how well an older adult performs the task at hand (Knowles, 1990). Older adults
focus on aspects of life that have the most value or worth. A degree of self-sufficiency and independence is important to the older adult.

Elderly people respond to learning that provides them with the skills to remain independent (John, 1988).

E. Orientation to Learning

Adult orientation to learning is task and problem-centered. Adults acquire new knowledge if they feel it will help them perform important tasks. The learning must be applicable to real life and problem-solving activities (Knowles, 1990). Presentation of familiar and relevant material that has personal significance and connection to the real world is most suitable to the older learner (Knowles, 1990).

F. Motivation

The most potent motivators for older adults are self esteem, quality of life, and independence. Normal adults want to keep growing and learning but motivation may be undermined by programs that do not apply the principles of adult learning (Knowles, 1990).

G. Environment

According to Knowles (1990), there is a growing interest in environments that are conducive to learning. Environment is especially important when dealing with older adults as many of them have problems with vision and hearing.
1. **Physical Environment**

A physical environment conducive to learning for the older adult should be in a room where the ventilation and temperature is comfortable for the learner. The older adult should have access to clean drinking water and toilet facilities. Promoting a safe environment where learning can take place is essential (Knowles, 1990).

a. **Vision**

Aging people require twice as much illumination for close tasks as a person age 26. Increasing illumination may also increase glare. Large print material such as books and education material should be done on paper with a glare-free surface. Large black print on a white background is desirable (Matteson, McConnell & Linton, 1996; John, 1988).

b. **Hearing**

Eliminating background noise prior to communicating educational material can increase hearing ability. Lowering the pitch of the voice and speaking in a moderate tone and volume is essential when dealing
with an older adult with a hearing disability (Matteson, McConnell & Linton, 1996); John, 1988).

Hearing loss affecting high frequency sound is a barrier to communication with the older client. This is of special concern when new material is being presented. Background noise interferes with hearing in a group setting and registration of new material is impossible (Matteson, McConnell & Linton, 1996).

H. Experiences and Needs

According to Lindeman (1926), the resource of highest value in adult education is the life experience of the learner. Piaget (1969) proposes that people use the background and experiences they have to explain the world. This assimilation fits the features of their environment into their existing ways of thinking. Adjusting an older person's medication regimen into the existing comfortable regimen may improve adherence. The elderly rely on tradition and associated norms they have held onto for long periods of time in their daily routines.

Accommodation according to Piaget (1969) is a necessary part of learning. New features of the environment are incorporated into a daily routine. Taking medication every day may be a new and frightening experience for some elderly. Education explaining their
medical problems and how medication will impact the problem is a challenge most elderly are up to provided the lesson has a central focus and has relevance for them. Elderly people are able to look at new information requiring cognitive work but an older person must have sufficient time to process the information (John, 1988).

I. Cognitive Ability

Cognitive functioning has three components: intelligence, learning and memory.

1. Intelligence

Intelligence, the first component, is defined as the limit of an individual's performance where the limit is determined by biological and genetic factors. The ability to achieve the limit is influenced by environmental opportunities offering intellectual stimulation (Hooyman & Kiyak, 1993).

Distinguishing between fluid intelligence and crystallized intelligence is useful when considering aging differences. Fluid intelligence consists of skills determined by biology and not by experience or learning. Crystallized intelligence is the result of knowledge and abilities gained through life experiences and education (Hooyman & Kiyak, 1993).
An older person may not respond as quickly to cognitive processes, but they know more information and do better on test items that tap into crystallized intelligence. Crystallized intelligence improves with age and continues to grow through most of the adult lifespan (Pressley & McCormick, 1995; John, 1988).

2. Learning

Learning and memory are intertwined. Learning occurs when the individual can retrieve information from his/her memory storage. The process in which new information is encoded into one's memory is called learning. If an individual cannot retrieve information from memory, learning has not taken place (Hooyman & Kiyak, 1993).

There are factors that affect an older person's ability to learn. As we age, psychomotor and sensory ability slows and this affects a person's speed in responding to new information encoding. Presenting information that allows self-paced learning benefits the older adult. Pacing the information and presenting new information at a rate that permits the older adult to practice the newly-acquired knowledge is helpful (Hooyman & Kiyak, 1993; Pressley & McCormick, 1995).
3. **Memory**

Memory is the part of the brain where information learned over a lifetime is stored. The process of recalling or retrieving this information when necessary is memory. Three types of memory identified by researchers are: 1) sensory memory, 2) short-term memory, and 3) long-term memory. Sensory memory is the information received through the sense organs of sight, hearing, smelling, taste and touch and passed on to primary or short-term memory. Information is retained in short-term memory for tenths of a second, but is a critical process in our ability to learn new information. Primary memory decides what information is important and should be retained and what should be discarded. For information to be stored successfully in secondary or long-term memory, it must be important and rehearsed consistently. A lifetime of learning is stored in secondary or long-term memory which has an unlimited capacity (Hooyman & Kiyak, 1993; John, 1988).

**Creativity**

Creativity is the ability to develop solutions in new situations and create an original idea or product. The end of life often stimulates creativity and is not tied to chronology but is more aligned with self-
actualization. People do not come into the world self-actualized. Changes in their lives and growth that comes from working through the changes is essential for continued growth and self-actualization (Ebersole & Hess, 1998).

Many elderly people have suffered multiple losses and chronic illness. Learning how they cope with both can be a valuable tool when educating about a medication regimen. Adapting the older person’s problem solving techniques to promote safe medication practice could prove invaluable. Elderly people are creative and can be stimulated to develop talents that lie dormant. Reviewing the skills they possess allows them to create new skills necessary to remain independent (John, 1988).

III. Conceptual Model

Two theories are combined to provide a conceptual model for this project. One such theory, Bandura’s theory of self-efficacy, proposes that personal mastery and success determines if an individual will perform a health behavior (Bandura, 1977). Bandura’s theory of behavioral change predicts that individuals will experience self-efficacy when they have mastered a task. The increased feelings of self-efficacy will lead to changes in behavior with improved outcomes (Bandura, 1977, 1986). A second theory, Orem’s theory of self-care, is defined as "the practice of activities that individuals’ personally
initiate and perform on their own behalf to maintain life, health, and wellbeing" (Orem, 1971, p. 1). (See Figure I.)
CONCEPTUAL MODEL

FIGURE 1

SOCIAL COGNITIVE THEORY
(Bandura, 1977, 1982)

SELF-EFFICACY

SELF-CARE THEORY
(Orem, 1971)

COMPLIANCE WITH MEDICATIONS

Prescription & Over-the Counter

Herbal Alternatives
A. Self-efficacy

According to Bandura (1986), human functioning is a result of behavior, personal factors, cognitive ability, and environmental events working together to produce change. The change is mediated by a person's perception of self-efficacy. Self-efficacy is a person's judgement of his/her ability to perform a behavior. A person who feels he can perform a behavior successfully is more likely to continue to perform the behavior. People will avoid tasks they believe they are incapable of mastering. Self-efficacy has been proposed as one of the major determinants of medication behavior (DeGeest, Abraham, Gemoets & Evers, 1994). Self-efficacy is specific to the behavior in question and to the underlying situational factors (Bandura, 1986).

If an older person is to have feelings of self-efficacy in medication-taking behavior, situational factors contributing to non-compliance must be considered. An older person who does not understand the directions a physician or pharmacist gives regarding the medication may not take the medication correctly. The older person may be labeled non-compliant, diminishing feelings of self-efficacy.

To build feelings of self-efficacy, the professional who has expert power has the ability to increase a client's self-efficacy and self-esteem (Buchmann, 1997). Expert power is the result of knowledge
and skills gained through education and experience. Individuals can use their expert power to share information that will improve outcomes (Buchmann, 1997). According to Frank (1995), the patient brings to the relationship self-knowledge that the physician can use to guide the patient's treatment. Combining a patient's self-knowledge with the professional's or practitioner's knowledge about a medical condition and how the medication affects the condition, creates a mutual respect leading to a partnership alliance improving compliance and self-efficacy. Buchmann (1997) and Bandura (1977) both contribute to a ten-step approach that can be used to increase self-efficacy and reduce non-compliance.

1. Inquire about a client's past and present illness and the medications and treatments prescribed. This inquiry is important and will help establish a plan of care to assist the client.

2. Use Bandura's theory calling for *verbal persuasion* and assure the client that information they give is very important in the development of a plan of care.

3. Encourage the client to disclose how they deal with medication-related problems. By including a client's thoughts and ideas in care plan development self-esteem is increased.
Reflecting on how others they know have dealt successfully with a medication problem is what Bandura refers to a **vicarious experience** and can also be a valuable tool in helping a person develop strategies of their own.

4. **Determine a client’s knowledge about the condition and the treatment needed.** Increasing a client’s self-knowledge increases self-efficacy to deal with the condition and the medications necessary to treat the condition.

5. **Determine how much effort clients are willing to expend.** This will help determine the degree of self-efficacy they possess and will help the professional develop strategies that can increase a person’s self-efficacy.

6. **Show genuine interest in the client as a person.** Clients who feel the professional is interested in them may be more willing to accept recommendations concerning their medications and treatments.

7. **Use Bandura’s theory of performance attainment and invite the clients to be responsible for their condition and treatment.** Assure them they have the skills to do so as this will encourage them to follow the recommendations and treatments.
When clients can see improvement because of their actions, they will experience increased self-efficacy.

8. Integrate the regimen into the clients’ daily schedules to improve medication-taking behavior. Including client input when developing an appropriate schedule for their lifestyle may decrease non-compliance. By taking the medications on a schedule amenable to their lives, clients increase compliance, improve their health, and increase their self-efficacy.

9. Discuss the consequences of noncompliance with medications. Failure to take medication prescribed for high blood pressure may cause a stroke, resulting in disability and loss of independence. Fear provoked by this disclosure is what Bandura refers to as the physiological state. Fear that is constructive and properly guided can stimulate a person to learn more about how to avoid a stroke such as compliance with medications (Bandura, 1986). Positive feedback from a professional when health is improved and a condition is stable, is crucial and increases self-efficacy.

10. Ask a client about their daily routine. The elderly rely on daily routines that are a result of tradition or norms, such as the spouse always setting out the medication, or the older person
always taking medication following a meal. Recommendations and client actions that include tradition and norms utilized over a long period of time encourage clients to participate in a regimen. The result may be increased compliance with the medications.

Knowing what to do and a belief one can do it are not the only things that determine behavior. A person must know how to perform the behavior and want to perform the behavior. Education programs must help people to know what to do, give them skills they need to perform the behavior, and provide incentives when they perform the behavior (Lawrence & McLeroy, 1986).

B. Self-care

Orem (1980) proposes that performing a self-care action involves making a choice and is a practical response to a person’s need to maintain life, health, and well-being. Self-care is a deliberate goal-seeking activity. Learning how to meet self-care needs comes from the beliefs and practices unique to the individual’s culture. A self-care action is beneficial when it includes a person’s values and goals. People have the right and responsibility to care for themselves. As a
person matures, the desire to be self-reliant and self-directed increases (Roberson & Kelley, 1996; Orem, 1980).

Self-care is universal and is used in a majority of health care situations. The diabetic who carefully monitors glucose levels and the person who treats flu symptoms by drinking an adequate amount of liquids are practicing self-care. According to Padula (1992), self-care is viewed as supplemental to professional care. For the past 50 years self-care has been overlooked as part of the health care system. The emergence of a cohort of elderly who are healthy and more educated find self-care appealing. These elderly want to remain independent and have more personal control in health care decisions (Padula, 1992).

Self-care needs vary in an older population. The skills individuals use to deal with specific self-care behaviors depend on their needs. Older people with vision problems may use a different self-care approach when taking daily medications than people with no vision problems. They may place their medication in the same place every day and request large print directions from their pharmacist. This act of self-care reflects a person’s capacity to adapt to aging changes. Seventy-five percent of older adults have made some self-care behavioral modifications in their daily lives as a result of functional limitations (DeFriese, Konrad, Woomert, Norburn & Bernard, 1994).
The first step in self-care practice is to answer two questions. "Is it beneficial for me and can I do it?" (Orem, 1980, p. 71).

Whether or not people can perform acts of self-care depends on their feelings of self-efficacy, a belief that they are capable. The four things necessary for self-care are a) learning, b) using the knowledge to perform self-care actions, c) motivation, and d) skill. The ability to engage in self-care comes from the spontaneous process of day-to-day living. Instruction and supervision by others along with the experience of performing the self-care measures helps develop a person's self-care agency (Orem, 1980).

Self-care becomes a way of building self-efficacy and a sense of personal control. Control is important to an older person whose concerns are related less to death than they are to being a burden to their family. Professionals working with older adults must recognize that health education programs can increase self-efficacy. Changes in health risk behavior such as medication non-compliance can reap long-range benefits. Self-care programs produce informed clients who are aware of changes they can make in their lifestyles to reduce risks of health problems (Richardson & Harrington, 1993).

A limitation of Orem's self-care theory may be in its applicability to people of non-dominant cultures. The essential
premises of self-care theory maintain that a person has the right, responsibility, and ability to care for themselves and that self-reliance increases with age. This way of thinking is based on Western values of independence, decision making, and self direction. These values may be incompatible with a non-Western non-Anglo culture that fosters interdependence, interconnectedness, and interrelationships. In some cultures self-care may disrupt family roles that emphasize a responsibility for others' health care needs. In many cultures, the self includes the family (Leininger, 1992; Morales-Mann & Jiang, 1993). Orem discusses culture from a biomedical viewpoint that assumes when one is sick they will seek a medical doctor. From this perspective there is no room for folk health beliefs or alternative or complementary approaches and practices (Roberson & Kelley, 1996). Alternative, which Barrett (1993) also terms complementary health care practices, is defined as "medical intervention not taught widely in U.S. medical schools or generally available at U.S. hospitals" (Eisenberg et al, 1998, p. 1569). Examples of alternative or complementary therapy include acupuncture, herbal medicine, and megavitamin therapy (Eisenberg et al, 1998). The problem of medication non-compliance as a self-care deficit can be overcome when interacting with elders from other cultures if the "self" includes the family. If other cultural norms such
as being with and being responsible for another are valued, the chance of success is greater (Leininger, 1992).

The literature review for this project focused on variables that influence compliance/non-compliance with prescription medications, but there are other products older adults use to maintain health and wellbeing. Products like herbs and over-the-counter medications (O.T.C.s) are a common self-care practice. OTC use is self-initiated, and as a result there may be no communication between client, practitioner or health care provider, and pharmacist about over-the counter use (Conn, 1991).

**Over-the-counter medication**

A study by Holden (1992) found that over-the-counter medication constitutes 40% of the medications taken by a geriatric population. The most common medications taken are laxatives, cold and flu preparations, and analgesics. The use of over-the-counter medication is an older person's self-care response to illness symptoms. Older adults select self-medication for various reasons: a) the OTC’s require no trip to the physician for a prescription, b) OTC’s are less expensive than many prescription drugs, and c) older people feel OTC’s are safe or a drugstore would not carry them (Moore & Johnson, 1993). Over-the-counter medications are the most basic form
of health care when used as a strategy to cope with and exert control over one's life (Conn, 1991).

Over-the-counter analgesics are used to treat arthritis, a chronic painful condition affecting many people over 60 years of age. Arthritis limits the mobility necessary to perform activities of daily living. Analgesics relieve the discomfort allowing a person to move more comfortably (Chrischilles, Lemke, Wallace, & Gregg, 1990; Stoller, 1988). A carefully monitored drug therapy program can be undermined when an older person fails to report OTC use. Non-prescription drugs interacting with prescribed medications can increase the risk for toxicity and adverse reactions (Stoller, 1988).

Elderly people fearful of losing their independence will self-medicate with over-the-counter medications. Self-medication tendencies may be increased as a result of television and print media offering cure-alls that will allow the older person to remain self-sufficient (Stoller, 1988).

**Herbal Alternatives**

The practice of self-care extends to the use of other alternative or complementary health care strategies that include herbal medicines and megavitamins. Eisenberg et al (1997) conducted a study about American health care practices. Results showed that in the U.S.
population, one in five adults, or 15 million, age 18 to 50 and above were taking prescription drugs, herbs, and high doses of vitamins. Of the 15 million, three million were adults over the age of 65 and more likely to have chronic illnesses, putting them at risk for adverse reactions.

The effects of the media directed at an elderly population living in a drug-oriented culture cannot be ignored. Elders are vulnerable to advertising by a multimillion dollar industry interested in making a profit by promoting a pill for every ailment (Burnside, 1988).

In 1990, consumers in the United States spent $118.6 billion for herbal teas sold in supermarkets. Many of the imported products, including teas, contain toxic substances extremely dangerous for elderly people seeking remedies that require no physician prescription (Joel, 1995).

The Food and Drug Administration regulates foods, drugs, and cosmetics. Although there are more than 1400 herbs sold commercially, only nine have been judged by the FDA as safe and have effective therapeutic value (Youngkin & Israel, 1996). Many elderly who practice complementary therapies do so without the supervision of their physician. Health care provider bias toward self-care modalities, viewing them as quackery, prevents communication with their patient.
Older people undergo life changes that make them vulnerable to chronic illness. Self-care strategies that provide an opportunity for choice and control become life-affirming and empowering. The practitioner/professional must keep the lines of communication open and be nonjudgemental when interviewing older clients about their self-care strategies (Barrett, 1993).

IV. Evaluation of National and International Programs Educating Older Adults on Safe Medication Practices

A search for innovative programs revealed three programs in the United States and one in Gander, Newfoundland. These community-based programs were developed by agencies working with elderly clients. The programs disseminate information and establish a network elderly people can turn to for answers to medication-related problems. The four programs reviewed and evaluated were chosen as a result of the consistent recognition they receive in professional journals representing various disciplines researched for this project.

A. Baltimore: The University of Maryland

Elder-Ed and Elder-Health Programs

In 1979, the University of Maryland’s School of Pharmacy developed two programs. The Elder-Ed program pairs retired pharmacists with pharmacy students. Initial funding for the programs
came from the Administration on Aging, along with a grant from the School of Pharmacy at the University of Maryland. The goal of the Elder-Ed program was to train second and third year pharmacy students to work with elderly clients on the safe and effective use of medications. Presented at local senior organizations, the program dealt with topics of interest to elders such as generic drugs, over-the-counter medications, and information about vitamins. The second program, Elder-Health, trains caregivers, family members, and other professionals to provide medication information to the elderly in other settings including their homes. Through this program, non-ambulatory elderly were able to receive needed medication education (Lamy & Feinberg, 1978).

Evaluation: The Elder-Ed and Elder-Health programs involve elderly as providers of information, not just receivers of information. Elder input helps improve materials used in the public presentations (Lamy & Feinberg, 1982). Including elderly in the planning of educational material is one of the tenets of adult learning (John, 1988; Knowles, 1990). The Elder-Ed and Elder-Health programs continue to conduct classes on medication safety. They provide pamphlets with information about generic drugs, over-the-counter medications, and vitamins. Pamphlets on How to Choose a Pharmacist/Pharmacy are available
along with a pamphlet on *How to Communicate with Your Physician*. According to the literature (Ascione, 1994; Esposito, 1995, O'Connell & Johnson, 1992), continuing education is essential if an older person is to be compliant with their medications.

The Elder-Health program involves family members and caregivers in providing medication-related material to their elderly. Ebersole & Hess (1998) proposes that successful compliance with a medication regimen is increased if family members are available to provide support.

B. **Gander, Newfoundland**

**Seniors Resource Center: Aging and the Use of Drugs**

A community program developed by a health educator was designed to increase seniors' awareness of the use of prescription and over-the-counter medications. People 50-65 were the target population for the program, funded by Health Canada: Canada's Drug Strategy, and the Seniors Resource Center. The program educates older adults about safe medication use, but younger people are making health decisions that will impact their senior years. Learning medication management skills at a younger age may prevent problems in later life. Education focuses on the role the consumer plays in health care responsibility. The program is preventive in nature and has adopted the
philosophy it is never too late to learn something new. Four of the seven modules in the program deal with medication information. The program relies on volunteers to present the workshops. Volunteers receive indepth training about the special characteristics and needs of older adults and the training takes place at the Senior Resource Center in Gander (Gander and District Continuing Care, 1993).

Evaluation: Aging and the Use of Drugs focuses on consumers and their responsibility for their health care. The concept of self-care is enjoying a resurgence. Self-care behavior involves two issues: a) what elderly people do to improve and maintain health, and b) how elderly cope with chronic illnesses and medications in later life (Mockenhaupt, 1993). A program that encourages self-responsibility and self-care is valuable. The socialized approach to medical care in Canada encourages preventive health care. The program trains volunteers to be cognizant of the special needs of the elderly such as eliminating background noise and lowering the pitch of the voice for those elderly with hearing problems and increasing illumination and using large print material for older persons with vision difficulties (Matteson, McConnell & Linton, 1996).
C. **San Francisco**

**SRx - Senior Medication Program**

The program was founded in 1977 by three health education professionals working in the community. Funding was received from the San Francisco Department of Public Health and two local foundations. The goal of the program was to prevent medication misuse among elderly people. Twelve pharmacies in the ethnic minority areas of San Francisco became health information centers. Information for elders about safe medication practice was available in many languages reflecting San Francisco’s cultural diversity. The pharmacists created profile cards, a reference source on their elderly customers. The community outreach focus of the program developed to help seniors improve their medication practice, brought programs to sites frequented by seniors. The Department of Health still conducts medication safety classes, but the pharmacy/pharmacist part of the program is no longer viable as a result of changes in funding priorities (Link & Frieden, 1978).

**Evaluation:** SRx-Senior Medication Program involved elderly from ethnic minorities in medication safety. Information on safe medication practice was printed in a culturally-appropriate form. Educators conducting the classes were aware of the unique characteristics of each
culture, and they conducted classes in the language of the people being instructed. As Jackson (1993) pointed out, including cultural norms and beliefs in an educational program can decrease treatment failure and increase medication compliance.

D. Pittsburgh, Pennsylvania

St. Francis Medical Center: The Elderly Outreach Project

Founded in 1984, the program, initially funded by a private source and later by the Department of Health, was implemented at senior centers following two community assessments of needs. Programs addressing the problem of medication use and misuse were built on educational programs that were being offered at the senior centers. Nurses conducting blood pressure screening clinics took medication histories and kept medication records on each participant. A Pharm D, a pharmacist with an advanced degree in his field, was available to help clients who were non-compliant or had problems understanding their medication. The Elderly Outreach Project developed the Test of Knowledge, a tool to assess an older person's knowledge about medication management. The test targets specific educational needs and knowledge gaps older adults have regarding medications and medication-related problems. At the present time, due
to changes in funding priorities, no staff are available to continue the program (Marion, Jewell & Silverman, 1995).

**Evaluation:** The Elderly Outreach Program (EOP) held classes at senior centers, senior high rises, and retirement communities. Seniors who were able to get to the senior centers or lived at the retirement community and high rise were the ones able to take advantage of the safety classes. A pharmacist available to help with medication questions was a benefit for the elderly involved with the program.

Development of the Test of Knowledge by the EOP (see Appendix B and C) allowed program developers to target their medication safety classes to the elderly in most need of education. The Test of Knowledge made it possible to allocate money for education where it would be most effective.

All four of the programs evaluated involved elderly in the planning of their classes. All four programs completed a community assessment of needs enabling program developers to put resources where they would do the most good. All four programs set goals establishing what they wanted to accomplish. The San Francisco SRx-Senior Medication Program and Pittsburgh’s Elderly Outreach Project lost their funding when priorities changed. Elder-Ed and Elder-Health programs receive funding from a
pharmaceutical company, and Newfoundland's program receives government support.

The diversity of efforts to address an important educational need is apparent in the four programs reviewed. While the approach may vary, the goal of the four programs, to teach older consumers how to prevent medication misuse, is consistent.
Chapter II

Selected Inventory of Existing Community Resources

One of the goals of this project was to identify those community resources that serve the senior population in Salt Lake County with medication-related, learning and education needs. An inventory of community needs can enable a program planner to consolidate resources so that they can be used in the most effective way. Informal inventories are important because it can help to avoid the duplication of resources. At the same time a base of support and common ground can be established among agencies and people who can be of assistance. Sharing information on community resources, especially on medication-related needs, creates an awareness of relevant activities in a community to deal with specific problems.

Interviews with designated contact people within each selected agency or service for this project were based on criteria identified as important in the literature review, and arising from the conceptual framework (see Appendix A).
Salt Lake County Aging Services

Healthy Aging Program

On October 26, 1998, I met with Brent Hill, one of the three educators for the Healthy Aging Program (HAP). Brent gave me his permission to use his name. During the summer of 1998, Brent conducted a survey of 13 senior centers that fall under the umbrella of Salt Lake County Aging Services. A total of 252 seniors from the 13 centers responded to a health questionnaire designed to obtain information about class presentations HAP offers at the senior centers.

Seniors were asked to circle classes they would be interested in attending from a list of 13 subjects that included alternative/herbal medicine and medications in general. Out of 252 seniors, 72 or 28% were interested in alternative/herbal medicine, and 60 or 23% were interested in learning more about medications in general. The questionnaire asked participants to suggest other classes HAP should present.

Based on the questionnaire that is being re-evaluated, HAP is working on improving class delivery by looking into transportation problems that prevent seniors from attending classes. HAP is working on ways to advertise the classes offered. Brent also teaches 30-minute lunch hour classes and the longer classroom presentations. During the classes Brent encourages the seniors to share experiences and actively participate in class discussions.
On February 10, 1999, I spoke with a second educator with HAP who gave me permission to use her name. Carole Avery coordinates the Brown Bag Seminars held in October when pharmacy students from the University of Utah School of Pharmacy are available. The Brown Bag Seminars encourage seniors to bring all their medications to the seminar where a pharmacy student and an instructor review the medications and teach the older client about the medications they are taking. A graduate student from the University of Utah School of Pharmacy is consulting with Smith's Food and Drug on the feasibility of offering Brown Bag Seminars once a month.

Carole is involved with a group called Senior Scholars who hold their classes at four to five senior centers once a month. The classes taught are based on subjects the seniors feel are important. Medication-related issues have been discussed at the meetings. Education level of the seniors is at the middle to high school level, allowing the educator to present information in detail at this level. In October the seniors focus on medications.

Carole is also involved in presenting the 30-minute lunch time classes at senior centers. A drawback of the sessions is that the educator has to capture the seniors' attention quickly as a result of the limited time period in which to present material.

On February 11, 1999, I spoke with the third health educator for the Healthy Aging Program. Carol Janiga allowed me to use her name for the
assessment. Carol is the educator for two wellness groups for seniors. The first group meets every Monday at 3:30 p.m. at the senior complex on 2100 South and 200 East. The group is open to seniors from the community as well as seniors living at the senior complex. Senior input determines class content and is based on topics of interest. Wellness and maintenance of healthy living is the group’s goal. The second wellness group Carol conducts meets at Valley Fair Village, three to four times a month. This group is open to residents of the Village only, and again, the group’s focus is on wellness. Seniors determine class content based on their interests. Medication safety has been discussed at both groups. "How to Pay for Medication" is a popular subject.

The HAP also conducts onsite blood pressure clinics. The person responsible for coordinating the clinics is Wendy Warlaumont, and she gave me permission to use her name for this assessment. The clinics are held at the Terrace apartments, Hamilton Court senior housing, and the Ben Albert senior complex among others. Clinics are held once or twice a month, depending on availability of volunteer personnel. The clinics are excellent places to teach safe medication practices. The seniors who come to the clinics are interested in remaining healthy and independent.
Salt Lake City/County Health Department

On February 8, 1999, I phoned Mr. Dan Kinnersley, the director of the Bureau of Health Promotion for the Salt Lake City/County Health Department. Mr. Kinnersley, who gave me permission to use his name, informed me that the health department offers no classes to seniors on medication-related issues and referred me to Salt Lake County Aging Services-Healthy Aging Program. Mr. Kinnersley reported that he would like to have money for all the necessary programs, but at the present time funding is for issues affecting the adolescent population such as tobacco use and drug prevention.
Jewish Community Center

On February 9, 1999, I visited with Erin Grenier, the program specialist on elder issues for the Jewish Community Center. Erin gave me permission to use her name. Ms. Grenier is responsible for arranging classes for older clients that focus on health issues of interest to seniors. In October of 1998, a professional from the University of Utah School of Pharmacy spoke to the senior group about over-the-counter medications. "Possible Interactions With Prescription Medications" was part of the lecture, and the seniors were encouraged to ask questions during and after the lecture. The lectures change from year to year.
VIP Program

St. Joseph Villa

On February 10, I spoke on the phone with Ginger Moulton, the
director of Development for St. Joseph Villa, who gave me permission to use
her name in my assessment. Mrs. Moulton initiated the VIP Program. The
program was open to seniors from the community and offered classes such as
"Coping with Grief" and "Dealing with Depression During the Holidays."
The person who arranged the classes and selected the speakers had a degree in
social work. The VIP Program ceased to be viable after the social worker left
for a full-time position. No efforts have been made to re-establish the
program.
School of Pharmacy

University of Utah

On February 23, 1999, I spoke with two faculty members from the School of Pharmacy who agreed to let me mention their names. Dr. Trish Orlando teaches an advanced pharmacy class for nurse practitioners that includes a segment titled, Drugs and the Elderly. Dr. Orlando has also lectured to gerontology students about the topic of prescription medications and the older adult, focusing on how physiological changes of aging affect medication efficacy. Dr. Linda Oderda informed me that during the month of October, National Pharmacy Month and Medication Safety Week, pharmacy students go into the community and are involved in Brown Bag Seminars at senior centers. Seniors are encouraged to bring to the center any prescriptions, over-the-counter medications, and herbs they are taking. The medications are assessed by a pharmacy student who looks at expiration dates, outdated medications, and correct dosage. Dr. Oderda is involved in health promotion activities with the Gerontology Center at the University of Utah.
Senior Center
Columbia St. Mark's Hospital

On February 19, 1999, I spoke with Mr. Farley Sowards, the Director of the Senior Center at St. Mark's Hospital. Mr. Sowards, who gave me permission to use his name, informed me that the Senior Center has no official program on medication safety for seniors. Patients who come to the Senior Center are given a comprehensive physical assessment. After the assessment is complete, the client is given a "ditty bag" similar to a bag for golf balls and is asked to bring every medication they use, including over-the-counter pills, vitamins, and herbs back to the center. A physician and a nurse review the medications and try to reduce or eliminate the number of medications the older client is taking. The physician and nurse find that taking outdated medications, taking less medication to save money, and taking medication meant for another family member are just a few of the practices of older adults.

During the initial assessment of a patient, a social worker is available to help clients who may have problems obtaining necessary medication as a result of financial difficulties. The Senior Clinic at St. Mark's has more free sample medications for older adults than other clinics in the city. Drug companies cooperate with the pharmacy, physician, and the Senior Center to provide those free sample medications to clients who need them. Meticulous
paperwork is required to keep track of dosages and expiration dates. The social worker and the physician will help seniors fill out the necessary paperwork the drug companies require in order to provide the complementary medications seniors need. Patients of the Senior Center receive ongoing medication reviews.
Columbia St. Mark’s Hospital Chapter

The Senior Friends program, a not-for-profit organization, is open to anyone age 50 and older. The membership fee is $15 a year for one or $25 a year for two. The benefits available to seniors include activities that promote health and wellness. The local advisory board meets once a month and based on input from the membership arranges the classes held during the month. Exercise classes are held on Monday, Wednesday, and Friday, and are designed specifically for seniors. Senior Friends have had a pharmacist speak to them about over-the-counter medications, but have no regularly scheduled classes on medication safety issues. Senior Friends does have a mail-order discount pharmacy and eye wear benefit. Many of the classes meet at St. Mark’s Hospital. The local director did not give me permission to use her name but did provide a phone number that potential clients can use to receive information about Senior Friends (801/268-7593).
Senior Clinic

Salt Lake Regional Medical Center

On February 25, 1999, I spoke with Dave Christiansen, Director of the Senior Clinic. Mr. Christiansen, who gave me permission to use his name for my assessment, informed me that the Senior Clinic has no outreach programs in the community on medication-related safety issues. The clinic provides physician-to-patient teaching on medications for their clients. In 1998, the hospital lost the person holding a doctorate in pharmacy (PharmD) to another position. The PharmD was very knowledgeable on medication issues involving older clients and contributed his expertise to the clinic. His position has not been filled.
On February 22, 1999, I spoke with Ann Fantazier who gave me permission to use her name in my assessment. Mrs. Fantazier oversees the health promotion services for the YWCA. Mrs. Fantazier informed me that there are no education classes on medication safety or medication-related issues for senior clients. Mrs. Fantazier did express an interest in making classes on medication safety and medication-related issues available for the older clients who come to the YWCA. The YWCA does have water exercise classes for seniors and a low-impact aerobics class. Medication issues are not discussed at these classes.
Utah State Division of Aging and Adult Services

On February 24, 1999, I visited with a spokesperson for the Utah State Division of Aging and Adult Services. The division has produced a flyer in the past that dealt with the issue of taking medications safely but had to cease when the publication became costly. The division prefers to let aging agencies at the local level conduct programs and education on issues such as safe medication practices. The division does participate in The Medicine Program that is currently offered nationwide. The Medicine Program helps people apply for enrollment in assistance programs that provide prescription medications free of charge to needy individuals regardless of age. Information is available at the Utah State Division of Aging and Adult Services and on The Medicine Program website at http://www.themedicineprogram.com.
IHC Healthline

The IHC Healthline has replaced the Ask-A-Nurse service. The Healthline no longer has a live person answering questions. The message is pre-recorded. Directions are given using a touch tone phone. Medication information is obtained by pressing number "4," which connects to poison control. A person then must go through the criteria set up by poison control to obtain an answer to a medication question. This could be very time-consuming and frustrating to an older person with a hearing problem. If a person fails to follow directions or misses a cue, they must start all over again and repeat the sequence. An older person would need to have their questions organized in advance.
On February 22, 1999, I spoke with Mr. Neil Jensen, the Executive Director of the Utah Pharmaceutical Association. Mr. Jensen gave me permission to use his name for my report. Throughout the year the association coordinates and holds Brown Bag Seminars at least once at area senior centers, depending on availability of personnel. The association is also available to organizations such as the American Association of Retired Persons for discussions on medication-related issues. During National Pharmacy Month in October, the association focuses on ongoing medication issues affecting the general public such as poison control which will be offered in March of 1999.
Utah Senior Service Home Care

On February 26, 1999, a spokesperson for the Utah Senior Service Home Care informed me that their nurses provide teaching on safe medication issues to their clients only. The agency is not involved in offering any classes on medication safety issues to the community. Cuts in Medicare have curtailed many services that the agency previously offered.
Applegate Home Health

On February 25, 1999, I spoke with Ginger Goff, the Director of Nursing for Applegate Home Health. Ms. Goff gave me permission to use her name for my assessment and informed me that Applegate conducts clinics at some of the retirement communities such as the Parklane and Golden Age. During the clinics the seniors are given handouts on subjects like "What is High Blood Pressure" and "How to Manage Diabetes." The agency also gives all of their new clients a packet that includes what the client should know about medications such as the name, the dose, what the medication is for, and how often to take the medication. The agency also has a computer program available so that agency nurses can plug in a medication and get a print out on side effects, interactions, and contraindications. With this tool the agency nurses can do client teaching on safe medication practices. Ms. Goff also told me that the agency has nursing students rotate through, and the students teach clients as well. Ms. Goff did mention that they are not doing as many classes as in the past due to the latest Medicare cuts.
Heritage Home Care

On February 25, 1999, a spokesperson for Heritage Home Care informed me that the agency does not conduct any classes in the community on safe medication issues. They occasionally have an inservice on medication-related issues affecting the older client.
Med Shares Home Health

On February 25, 1999, a spokesperson for Med Shares Home Health Agency, formerly Columbia Homecare, informed me that the agency teaches individual clients about safe medication practices, and the agency has inservices for their staff on the subject. The agency is not involved in presenting any classes at senior centers or senior retirement complexes.
Get Up And Go and Prime Times

These two monthly publications are available for seniors along the Wasatch Front. The free publications can be found at supermarkets and businesses. The papers target the mature reader with articles that inform and educate. Prime Times staff informed me the paper has not published articles on medication safety issues but feel it would be something they would consider. Get Up and Go has published information on safe medication practices such as an article in the January 1999 issue called "Ask Your Pharmacist Please." The article dealt with the issue of over-the-counter cold remedies. Get Up and Go has a Medicare question of the month. In December 1998, the question dealt with prescription refill charges on a physician’s bill.

On a national level the March 1999 AARP Bulletin available to members in Utah printed a three-page cover story on "Drugs That Fight Can Hurt You." Medication interactions with alcohol, herbs, and foods were discussed along with helpful tips on what to do if you suspect a drug interaction. The article listed books available to help an older adult learn more about medications.

In the same issue, an article on President Clinton’s plan to let Medicare pay for prescriptions revealed the out-of-pocket costs many older Americans are paying for prescription drugs.
IHC Senior Services

On March 25, 1999, I spoke on the phone with Joan Kastelar, the director of IHC Senior Services. IHC Senior Services occasionally conducts classes on medication safety issues at St. Joseph Villa, an independent living center, and at the Heritage Senior Center. The Senior Life, a free newsletter produced by IHC Senior Services, is sent to 2,600 seniors in the Salt Lake area and has printed articles on medication safety issues such as never taking medication prescribed for someone else.

The IHC pharmacy located in the Senior Center at St. Joseph Villa is part of IHC Senior Services. The pharmacy is managed by Karin Steinkroft, PharmD, and Judy Petersen, Registered Pharmacist (R.ph). Karin and Judy gave me permission to include their names in the assessment. The pharmacy attends to the prescription needs of seniors only. The pharmacy's computer has a program called "Med Teach" that can print prescription medication information in Spanish (see Appendix E) for their Hispanic clientele. The computer program can also tailor printouts for male, female, and age. The program can adjust a printout to accommodate a person's educational level and begins at third grade. This is very helpful to older clients with literacy problems.

For more information about the program, contact the American Society of Health Systems Pharmacists at their Web site, http://www.ashp.com
Findings From Community Assessment

Findings from my community assessment revealed that the Healthy Aging Program of Salt Lake County Aging Services is the only agency attempting to offer classes on medication-related issues to seniors in the community on a continuing and unrestricted basis. Many of the HAP classes benefit seniors who frequent senior centers or live at the senior complexes where classes are held. Most of the home health agencies conduct inservices on medication-related issues for staff and are involved in patient teaching. One home health agency did conduct classes at two local retirement complexes for the seniors living there, but as a general rule the home health agencies conduct no community classes on any medication-related issue.

The senior clinics I interviewed were involved in patient-client teaching at the clinic but were not involved in community presentations on medication safety or any medication-related issue. The seniors who benefitted were patients at the clinics.

Classes held by Senior Friends at St. Mark’s Hospital requires a membership fee, and classes held at the Jewish Community Center require the senior to come to the site. The Brown Bag Seminars coordinated by the Healthy Aging Program, School of Pharmacy, and the Utah Pharmaceutical Association are usually held at senior centers, benefiting the mobile seniors who frequent the centers.
There is a large community of seniors in Salt Lake who do not live in senior complexes, need home health care, or frequent senior centers. Many of these seniors are living independently on limited incomes and their only means of transportation may be a friend or neighbor. Many seniors have poor eyesight or hearing loss and are unable to take the bus, much less stand on a corner alone to wait for one. The most pressing need that emerged from my community assessment is the issue of how to reach the isolated elderly. It is unrealistic to think that all elderly in the community can be reached with publicly disseminated information on safe medication issues.

Chronic illness affects 80% of community dwelling seniors (Ebersole & Hess, 1994; Milkulencak, 1992), and many elderly receive their only medication instruction and information at their physician’s office. Unfortunately, many physicians do not have adequate time to teach clients about their disease and how the prescribed medications will impact the disease. Teaching clients about medication side-effects may not be possible in a standard office visit.

Students may provide part of the solution to the problem of medication information needs of the elderly. Nursing students could spend practicum hours during their pharmacology rotation in a physician’s office teaching elderly clients about their medications. For other home dwelling seniors, pharmacy students who provide a hot line, such as the one developed by
pharmacy students at the University of Arizona School of Pharmacy (College of Pharmacy Newsletter, Winter 1995), could answer medication-related questions. The Arizona pharmacy students joined by local pharmacists, fielded 352 phone calls in three days answering questions about side effects, interactions, and medication cost.

The only social community activity that many seniors participate in is attending church on Sundays. In an effort to reach these seniors, classes on medication-related issues could be conducted on Sundays after church services. A program developed by a nurse practitioner from the University of Utah School of Nursing to teach Hispanic women about mammograms was well-received and well-attended as a result of the endorsement it received from a parish priest.

Seniors will often attend programs offered by a cultural center. The Japanese-American Citizen League holds programs of interest for seniors and may provide an opportunity to teach medication safety classes. Centro De La Familia is an Hispanic organization that may be interested in being involved in classes that stress medication safety issues for the older client.

Community schools offered by the Granite and Salt Lake School districts may be interested in offering a workshop/seminar on medication safety and medication-related issues as part of their Fitness and Wellness class. Senior citizens 60 and over receive a 10% discount on class tuition that is very
reasonable. Families whose older parents are taking multiple medications may find a class on medication safety helpful and informative.

The Meals on Wheels program administered by Salt Lake County Aging Services may provide another avenue for reaching seniors. A monthly flyer printed in large black letters on a white background could offer safe medication tips such as Check the Expiration Date on Your Medications, Always Read the Label Before Taking Your Medication, and Never Mix Medications in Different Bottles. Call Your Pharmacist to Ask Any Questions could also be on the flyer.

The Internet provides sites an older adult or a family member can access to obtain information about medications and online pharmacy services (see Appendix D). Internet access is available at public libraries, some senior centers, and increasingly more in private homes.

The above-mentioned proposed solutions are no panacea for the problem of reaching many of the isolated elderly in the Salt Lake Valley, but it represents a beginning point. Gerontology is inherently multidisciplinary, so it is important to receive input from other disciplines such as social work, physical therapy, and occupational therapy on ways to reach community dwelling seniors with education on safe medication practices.
Chapter III

Workshop and Seminar Design

Drug Management Issues and the Elderly

Unit I

I. Learner Objectives

Upon completion of this session participant will be able to:

A. Identify five factors that influence safe medication practices/considerations for professional practice

   1. Culture
   2. Economics
   3. Values
   4. Family
   5. Sensory deficits

B. Explain the importance of assessing factors that affect safe medication practice.

C. Identify two or more strategies for each factor that may help improve safe medication practice.

   1. Culture
      a. Use the dominant language of the patient to explain need for medication, drug dosage information, side effects, and how medication will impact disease process.
b. Include professionals and older adults from the dominant culture when designing a program or safe medication practices.
c. Develop educational programs sensitive to issues related to culture, race, and gender.
d. Have an understanding about cultural influences on health beliefs and behaviors.

2. Economics
   a. Adjust the treatment program to fit within the client’s budget.
   b. Encourage the patient to ask his/her physician about samples of the medication prescribed.
   c. Inform clients about mail order prescription service offered by American Association of Retired Persons.
   d. Encourage client to ask his/her physician to use generic medication when possible.

3. Values
   a. Today’s cohort of elderly believe in saving for the future and may find paying for medications burdensome.
b. Elderly are desirous of leaving financial legacy to family, friends and others. This may be more important than health.

c. Elderly do not wish to burden family with their care.

d. Independence is very important to the older adult.

e. A sense of control over their health care is important to the older client.

4. Family

a. Family members are most often named as the ones an older person turns to for assistance.

b. Providing family members with information about age-related changes may prevent problematic family situations. (Absences from work resulting in a loss of income.)

c. Family support is a positive influence on individual’s changing their health behavior, such as taking medications as prescribed.
5. Sensory deficits

a. Changes in hearing

1) Face the client when instructing him/her about their medication regimen.

2) Eliminate background noise when conversing with the older client.

3) Do not shout

4) Speak slowly and clearly; do not exaggerate speech.

5) Speak in a lower tone of voice.

6) Provide written instructions along with verbal instructions.

b. Changes in vision

1) Use larger print on prescription labels and instruction material.

2) Provide adequate lighting intensity.

3) If a client wears glasses instruct him/her that glasses should be worn when self-administering medication.
4) Encourage the older person to have routine assessment for glaucoma, cataracts, macular degeneration and reduced visual acuity.
Unit II

I. Learner Objectives

Upon completion of this session participant will be able to:

A. Identify the four pharmacokinetic changes in geriatric patients.
   1. Absorption
   2. Distribution
   3. Metabolism
   4. Excretion

B. Identify the most important body systems affecting drug disposition.
   1. Cardiovascular
   2. Gastrointestinal
   3. Hepatic
   4. Renal

C. Identify one physiologic change for each body system that affects drug action.
   1. Decrease in cardiac output
   2. Decrease in peristalsis
   3. Decrease in blood flow
   4. Decrease in excretion
Unit III

I. Learner Objectives

Upon completion of the session participant will be able to:

A. Implement the tool that can be used to determine learning needs regarding medication issues.
   1. Test of Knowledge designed by St. Francis Medical Center

B. Identify five learning needs and limitations that must be given special consideration when working with the elderly.
   1. Elderly people learn best when information is given in large print.
   2. Elderly people work well in small groups.
   3. Elderly people will be active in the learning process if it focuses on important issues in their lives.
   4. Elderly people respond to a teaching environment that is quiet with no background noise.
   5. Elderly respond to a teaching environment that is well lit and temperature is comfortable.
Summary and Recommendations

Summary

Non-compliance is a serious problem with potentially deadly results. Medication non-compliance by the elderly has been the subject of over 6,000 articles. The focus of the articles has primarily been on the causes of non-compliance and on potential ways to remedy the problem (Esposito, 1995). As the population ages the risk of developing a chronic illness increases. Chronic illnesses such as high blood pressure, diabetes, arthritis, and heart disease require older adults to take medications at four times the rate of a younger person (Kahl, Blandford, Krueger & Zwick, 1992). Prescription medications taken wisely can prevent premature death and extend the capacity for independent living.

The results of non-compliance are adverse drug reactions, hospitalization, loss of independence, and death (Einarson, 1993). The health care system in the United States suffers serious human and financial cost as a result of inappropriate medication use among older adults, as the aforementioned study by Col, Fanale and Kronholm (1990) revealed.

Unless the problem of non-compliance is addressed, the health care system will be strained further as the population of people over 65 continues to grow. The 34.2 million people in the United States over the age of 65 will
increase to 54 million by the year 2020 (United Seniors Health Cooperative, 1998). The state of Utah will see the number of people over 65 grow to 351,912 by the year 2020 (State of Utah Economic and Demographic Research Database Printout, 1996).

Compliance and safe medication practices are self-care activities requiring a personal belief in the ability to perform the behavior. In order for an older person to change noncompliant behavior, a belief in the capability to perform the safe medication behavior must exist. Behavior change is possible if a person understands a) the necessity for the behavior change, b) the consequences if a behavior change does not occur, and c) how to perform the skills necessary to change the behavior (Bandura, 1982). An educational approach based on an empowerment pedagogy such as Bandura's Theory of Behavioral Change will lead to increased feelings of self-efficacy (Bandura, 1977). Older adults who feel capable of performing a behavior are more likely to practice the self-care behavior of medication compliance.

The review of the literature for this project revealed that one of the solutions to the problem of non-compliance may be the availability of programs that offer older adults continuing education about safe medication practices (Esposito, 1995); however, there are significant issues to be considered when developing a program for older adults. A younger person may pursue an education to a) get a better job, b) make more money, and c)
move up in their present job. In contrast, an older person learns something new in order to become equipped to overcome problems presented by life situations. An older adult needs to participate in diagnosing learning needs, plan experiences, and help develop the learning climate (Knowles, 1993; John, 1988). In order to be effective in facilitating behavior change, a program must be constructed in a way that addresses the needs of the audience. Understanding how older adults learn and developing interventions and strategies based on theories of self-efficacy and self-care will empower the older adult to make wise health care decisions.
Recommendations

1. The workshop/seminar could be part of an orientation package for all home health workers.

2. Home health nurses could use the Test of Knowledge from the seminar as a screening device to assess their client’s knowledge about medication-related problems.

3. The Test of Knowledge could be utilized by personnel at senior centers as a prerequisite to teaching seniors about their medications and medication safety.

4. The Test of Knowledge could be used by student nurses in their gerontology or pharmacology rotations as a tool to assess client’s knowledge on medication-related issues.

5. Workshop/seminars could be given to certified nurses aides at long-term care facilities.

6. The workshop/seminar could be presented to a senior’s religious congregation to increase awareness of difficulties of safe medication practices in a senior population.

7. Parts of the workshop/seminar could be included in round table discussion at the yearly Utah Gerontological Conference.

8. Integrate workshop/seminar into the gerontology certificate and master’s of science curriculum program.
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Interview Guide

Name of Community Resource

Contact Person

1. Do you offer medication education to your elderly clients?
   Y____ N____

2. How do you determine class content?

3. Do you survey your elderly clients to determine educational needs regarding medication safety?
   Y____ N____

4. Do you involve your elderly clients in planning class content?
   Y____ N____

5. What are the qualifications of the individual(s) who teach your classes?

6. When and how often are the classes taught/offered?
APPENDIX B
April 28, 1998

Sandra Christiansen
648 East
900 South
Salt Lake City, Utah 84105

Dear Sandra,

I am sorry for the delay in getting this material to you. I recently lost my secretary and getting things out has been a tremendous undertaking. I am including a copy of the test of knowledge we designed as per your request. Feel free to use it as you need. I would appreciate a copy of the results of surveys you do with the instrument.

In addition to the test of knowledge I am sending you some information on our prevention project. I am sorry to say that the prevention project has gone into hibernation as a result of funding changes; however, there was a great deal of effort placed in the project and many good ideas emerged. I would be glad to share these with you. Included in the material I am sending to you are: the table of contents for the Medication Management manual, some handouts that we designed, and several pages that describe the project visually. I have two videos (a play and a video for doctor’s offices) that I will send to you later; I am getting copies made by our visual department.

Thank you for your interest and please, feel free to contact me if I can be of assistance in your project design (412-622-8008).

Sincerely,

Tod R Marion, M.P.H., Ph.D.
APPENDIX C
SECTION 1

INSTRUCTIONS
You will be given a number of questions over the next several pages. After reading the question, please choose the best response from the three possible answers: TRUE, FALSE, or DON'T KNOW. Please do not guess. If you do not know the answer or are unsure, choose the DON'T KNOW response. Choose your answer by placing an X in the blank space next to the correct answer. The following is a practice question.

EXAMPLE NUMBER 1
Medicine comes only in pills and tablets. . . .
(Place an X in the blank for the correct answer)

(1) TRUE
(2) FALSE
(3) DON'T KNOW

False is the correct answer. An X should be made next to the word FALSE. Medicine also comes in other forms such as liquids, eye drops, nose drops and shots.

1. People who forget to take their medicine, should take twice as much the next time the medicine is due.

(1) TRUE
(2) FALSE
(3) DON'T KNOW
2. Medicine may be working even though a person may not feel that it is working.

   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

3. One of the best ways to help with sleeping problems is to take a sleeping pill.

   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

4. A person should take medicine with food to make the medicine taste better.

   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

5. With the high cost of medicine, people should keep old medicine on hand in case they need it again.

   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

Medicines bought without a doctor's prescription, like vitamins, aspirin, and other over-the-counter medicines, do not have side effects.

   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW
7. Over-the-counter medicines may interfere with the prescription medicines that a person is taking.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

8. Medicines may spoil if they are kept too long.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

9. Medicine in the form of drops, that are placed in the eyes, can affect the medicines taken by mouth.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

10. Generic medicines do not work as well as brand name medicines.
    ___ (1) TRUE
    ___ (2) FALSE
    ___ (3) DON'T KNOW

11. As people get older, they will need to take a lot of medicines.
    ___ (1) TRUE
    ___ (2) FALSE
    ___ (3) DON'T KNOW

12. Some over-the-counter medicines contain alcohol.
    ___ (1) TRUE
    ___ (2) FALSE
    ___ (3) DON'T KNOW
13. If people begin to take medicine when they are older they will always need to take that medicine.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

14. Alcohol is a stimulant and makes older persons feel younger and more energetic.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

15. There is the same amount of alcohol in a 1.5 ounce "shot" of whiskey, a 5 ounce glass of wine, and 12 ounces of beer.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

16. Most medicines have side effects.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW

17. Beer and wine are safer to drink than hard liquor.
   ___ (1) TRUE
   ___ (2) FALSE
   ___ (3) DON'T KNOW
18. Some medicines cannot work as well as they should if they are taken right after eating a meal.

(1) TRUE

(2) FALSE

(3) DON'T KNOW

19. It is important to know the side effects of medicine that you are taking.

(1) TRUE

(2) FALSE

(3) DON'T KNOW

20. Small amounts of alcohol can help people digest their food, and wine has been shown to help prevent heart disease. Therefore, all older adults should use alcohol.

(1) TRUE

(2) FALSE

(3) DON'T KNOW

21. Taking medicines is the best way to handle all health problems.

(1) TRUE

(2) FALSE

(3) DON'T KNOW

22. It is important that a person understand everything that is written on the prescription label.

(1) TRUE

(2) FALSE

(3) DON'T KNOW
23. Most doctors need to ask a person many questions to find out what is wrong with that person.
   (1) TRUE  (2) FALSE  (3) DON'T KNOW

24. Warning labels on medicines only apply to a few people.
   (1) TRUE  (2) FALSE  (3) DON'T KNOW

25. Because doctors are very busy, a person should not take too much time asking too many questions during an office visit.
   (1) TRUE  (2) FALSE  (3) DON'T KNOW

26. Older adult bodies are more sensitive to medicines.
   (1) TRUE  (2) FALSE  (3) DON'T KNOW

27. The stress in people's lives can cause them physical problems.
   (1) TRUE  (2) FALSE  (3) DON'T KNOW
28. When people are going to the doctor, they should take along a list of all of the medicines they are taking.

___ (1) TRUE
___ (2) FALSE
___ (3) DON'T KNOW

29. If someone you know had a bad experience with the same medicine that you are going to take, you will probably have the same bad experience.

___ (1) TRUE
___ (2) FALSE
___ (3) DON'T KNOW

30. When you are preparing for a doctor's appointment, you should write down your questions to ask the doctor.

___ (1) TRUE
___ (2) FALSE
___ (3) DON'T KNOW

31. If you cannot get a refill for your medicine and someone you know takes a similar medicine, it is safe to borrow some medicine from that person until you can get yours refilled.

___ (1) TRUE
___ (2) FALSE
___ (3) DON'T KNOW

PLEASE CONTINUE TO THE NEXT PAGE.
INSTRUCTIONS
For the next set of questions you will be asked to look at the following prescription label and respond to the questions about the label. Choose the best answer to the question by placing an _X_ in the space next to the best answer.

**EXAMPLE QUESTION NUMBER 2**
The date the prescription was filled for Mary Smith was...

_ X_ (1) 4/21/92
   (2) 3/21/92
   (3) 4/21/91
   (4) 3/21/91
   (5) DON'T KNOW

*The best answer is "1". Place an _X_ next to the first response. Mary was given the prescription on 4/21/92.*
PRESCRIPTION LABEL

4/21/92
Mary Smith
Take 1 tablet three times daily.
PERSANTINE 50 mg.
REFILL 5X

(Place an X on the line of the appropriate response.

32. How many tablets did the drug store give to Mary Smith?
   ___ (1) 100 TABLETS
   ___ (2) 90 TABLETS
   ___ (3) 50 TABLETS
   ___ (4) 5 TABLETS
   ___ (5) DON'T KNOW

33. How many tablets should Mary Smith take each day?
   ___ (1) 5 TABLETS
   ___ (2) 3 TABLETS
   ___ (3) 2 TABLETS
   ___ (4) 1 TABLET
   ___ (5) DON'T KNOW
PRESCRIPTION LABEL

4/21/92                  PX123456
Mary Smith               Dr. Jones
Take 1 tablet three times daily.
PERSANTINE 50 mg.        #90
REFILL 5X

(Place an X on the line of the appropriate response.)

34. What is the strength of the medication that has been prescribed?

__ (1) 90 mg.
__ (2) 50 mg.
__ (3) 5 mg.
__ (4) 25 mg.
__ (5) DON'T KNOW

35. How long will it take before a refill is needed?

__ (1) 90 DAYS
__ (2) 60 DAYS
__ (3) 30 DAYS
__ (4) 14 DAYS
__ (5) DON'T KNOW
PRESCRIPTION LABEL

4/21/92 PX123456
Mary Smith Dr. Jones
Take 1 tablet three times daily.
PERSANTINE 50 mg. #90
REFILL 5X

(Place an X on the line of the appropriate response.)

36. What is the name of the medication that has been prescribed?

____ (1) CIMETIDINE
____ (2) IBUPROFEN
____ (3) TRAZODONE
____ (4) PERSANTINE
____ (5) DON'T KNOW

Please continue to the next page.
SECTION 3

INSTRUCTIONS
You will be given a number of questions over the next several pages. After reading the question, please choose the best response from the five possible answers. Please do not guess. If you do not know the answer or are unsure, choose the DON'T KNOW response. Choose your answer by placing an X in the blank space next to the correct answer.

EXAMPLE NUMBER 1
Which medical doctor is specially trained to work with older adults?

(1) A PEDIATRICIAN
X (2) A GERIATRICIAN
(3) A PHARMACIST
(4) AN OPTOMETRIST
(5) DON'T KNOW

The correct answer is number 2: An X should be made next to the number 2. A geriatrician is a medical doctor who is specially trained to work with older adults.

37. Which of the following statements is correct?

(1) IT IS O.K. TO STOP TAKING MEDICINE WHEN YOU START TO FEEL BETTER.

(2) IF THE MEDICINE HAS NOT HELPED AFTER WEEK OR SO, YOU SHOULD STOP TAKING IT AND CALL YOUR DOCTOR.

(3) ALL MEDICINE WILL START TO TAKE EFFECT WITHIN SEVERAL HOURS.

(4) SOME MEDICINE WILL STILL BE AFFECTING YOUR BODY WEEKS AFTER YOU STOP TAKING IT.

(5) DON'T KNOW
38. Your doctor told you to take your medicine once a day. When would you take it?
   (1) MOST MEDICINES ARE BEST TAKEN AT BEDTIME.
   (2) MOST MEDICINES ARE BEST TAKEN IN THE MORNING.
   (3) ASK YOUR DOCTOR OR PHARMACIST ABOUT THE BEST TIME TO TAKE YOUR MEDICINE.
   (4) IT IS NOT IMPORTANT WHEN YOU TAKE YOUR MEDICINE, AS LONG AS YOU TAKE THE MEDICINE EVERY DAY.
   (5) DON'T KNOW

39. You have been taking a medicine at the strength of 1 mg. You have just received a refill from the drug store. On the new label, the strength is 2 mg. What should you do?
   (1) CALL YOUR DOCTOR OR PHARMACIST BEFORE TAKING THE MEDICINE.
   (2) CUT THE PILL IN HALF AS BEST YOU CAN.
   (3) REFUSE TO PAY FOR THE MEDICINE AND RETURN IT TO THE DRUG STORE.
   (4) TAKE THE NEW MEDICINE THE SAME AS THE OLD ONE.
   (5) DON'T KNOW

40. Which of the following statements is correct?
   (1) THE BATHROOM MEDICINE CABINET IS THE BEST PLACE TO STORE MEDICINES.
   (2) UNUSED MEDICINES SHOULD BE KEPT FOR LATER USE.
   (3) A WARM, SUNNY PLACE IS THE BEST PLACE TO STORE MEDICINES.
   (4) A COOL, DRY PLACE IS THE BEST PLACE TO STORE MEDICINES.
   (5) DON'T KNOW
41. If the medicine prescribed by a doctor is too expensive, what should you do?

   (1) ASK THE DOCTOR OR PHARMACIST FOR ALTERNATIVES.
   (2) DO NOT FILL THE PRESCRIPTION AND SEE IF YOU GET BETTER WITHOUT IT.
   (3) TAKE ANOTHER, SIMILAR MEDICINE THAT ALREADY HAVE ON HAND.
   (4) USE AN OVER-THE-COUNTER MEDICINE INSTEAD.
   (5) DON'T KNOW

42. If a prescription label reads "Do not drink alcohol when taking this medication," which of the following is correct?

   (1) YOU SHOULD NOT DRINK ALCOHOL AS LONG AS YOU ARE TAKING THE MEDICINE.
   (2) AS LONG AS YOU DO NOT SWALLOW THE MEDICINE WITH ALCOHOL, YOU CAN DRINK ALCOHOL AT ANY OTHER TIME.
   (3) IF YOU DECIDE TO DRINK ALCOHOL, YOU SHOULD STOP TAKING YOUR MEDICINE.
   (4) IT IS ALL RIGHT TO DRINK ALCOHOL SEVERAL HOURS AFTER TAKING THE MEDICINE.
   (5) DON'T KNOW
3. If you do not remember how to take your medicine or have questions about your medicine, who can you ask for help—other than the doctor?

   ___ (1) A FAMILY MEMBER.
   ___ (2) A NEIGHBOR WHO IS TAKING THE SAME MEDICINE.
   ___ (3) CALL 911.
   ___ (4) THE PHARMACIST.
   ___ (5) DON'T KNOW

4. Which is the best way to talk with your doctor?

   ___ (1) LISTEN TO WHAT THE DOCTOR SAYS, AND THEN DO WHAT YOU THINK IS BEST AFTER LEAVING THE DOCTOR'S OFFICE.
   ___ (2) MAKE A LIST OF QUESTIONS AND CONCERNS AND ASK YOUR DOCTOR TO TALK WITH YOU ABOUT THESE.
   ___ (3) ONLY TELL (OR SAY) WHAT YOU THINK THE DOCTOR NEEDS TO KNOW.
   ___ (4) NOT MUCH COMMUNICATION IS NECESSARY BECAUSE THE DOCTOR CAN GET ALL THE INFORMATION NEEDED THROUGH TEST RESULTS.
   ___ (5) DON'T KNOW

A drug can be defined as any substance that affects the way a person's body works. Which of the following is a drug?

   ___ (1) BEER.
   ___ (2) LAXATIVES.
   ___ (3) VITAMIN B.
   ___ (4) ALL OF THE ABOVE ARE DRUGS.
   ___ (5) DON'T KNOW
SECTION 4

INSTRUCTIONS
This final section contains a few demographic questions. Please choose the answers that best describe your situation. All information in this section, as well as any other information you have provided, will be held in the strictest confidence and simply helps us to better evaluate the survey results.

46. Your sex.

   ____ (1) MALE
   ____ (2) FEMALE

47. Your present marital status.

   ____ (1) NEVER MARRIED
   ____ (2) MARRIED
   ____ (3) DIVORCED
   ____ (4) SEPARATED
   ____ (5) WIDOWED

48. Your present age: _____________YEARS

49. What was your total family income for 1991?

   ____ (1) LESS THAN $ 5,000
   ____ (2) $ 5,000 TO $ 9,999
   ____ (3) $10,000 TO $19,999
   ____ (4) $20,000 TO $29,999
   ____ (5) $30,000 TO $40,000
   ____ (6) OVER $40,000
50. Which of the following best describes your racial or ethnic identification?
   ___ (1) BLACK (NEGRO)
   ___ (2) CHICANO (MEXICAN-AMERICAN)
   ___ (3) NATIVE AMERICAN (AMERICAN INDIAN)
   ___ (4) WHITE (CAUCASIAN)
   ___ (5) ORIENTAL
   ___ (6) OTHER-SPECIFY _______________________

51. What is the highest level of education that you have completed?
   ___ (1) NO FORMAL EDUCATION
   ___ (2) SOME GRADE SCHOOL
   ___ (3) COMPLETED GRADE SCHOOL (COMPLETED 8th GRADE)
   ___ (4) SOME HIGH SCHOOL
   ___ (5) COMPLETED HIGH SCHOOL (HIGH SCHOOL GRADUATE)
   ___ (6) SOME COLLEGE
   ___ (7) COMPLETED COLLEGE (COLLEGE GRADUATE)
   ___ (8) GRADUATE WORK

52. Are you a cardholder for the PACE Program? (PACE stands for the "Pharmaceutical Assistance Contract for the Elderly").
   ___ (1) YES
   ___ (2) NO
   ___ (3) DON'T KNOW

53. Have you attended any educational programs dealing with medication issues for older adults?
   ___ (1) YES
   ___ (2) NO
   ___ (3) DON'T KNOW
Medication Questions or Problems? Medicines Making You Sick? Concerned About Drug Interactions or Side Effects?

Our Information Pharmacists Can Help You

- Feel Better
- Increase Control
- Decrease Risk
- Save Money

Medication Management, P.A. provides consumers with time-saving advice and explanations about medications and protection against drug interactions and side effects.

http://wwwIMPLEMENTED.com/medman/
Notice: This site provides medication information to the public for a small consultation fee ($5). If you wish to have the fee waived, please make the request and provide a reason upon submission of your question. Thank you.

Who Runs The Center

The Center is run by Drs. Randall Prince and Thomas Sisca. Both Drs. Prince and Sisca received their education and training in pharmacy and clinical pharmacology in Philadelphia, PA at the Philadelphia College of Pharmacy and Science. For over 25 years, they have been providing medication consultations to patients, physicians, nurses, attorneys and the pharmaceutical industry. Dr. Sisca is presently a clinical pharmacist and consultant in Maryland and Dr. Prince is a professor at the University of Houston College of Pharmacy and a consultant. For detailed information on each of these consultants, click here: Dr. Sisca or Dr. Prince

The Medication Information Center was developed to meet the need for unbiased, low cost medication information for the lay public. There are several medication sources on the Internet, but very few are serviced by experienced experts presenting unbiased views for the general public. Detailed consultations are available for other visitors (e.g., physicians, attorneys and other health professionals) to this web site. Email us for details.

General Public Information

The Medication Information Center will provide from time to time general medication information of interest to the public at large. Drs. Prince and Sisca will be writing short news briefs and opinions on topics of concern to our patients and the general public. These items will be in the News section of the web site. Disclaimer: The opinions and content of this homepage are expressly those of these individuals and are not to be construed as representing the Federal Government, State of Texas, the University of Houston or the Memorial Hospital of Easton, MD.

Aside from general topic information, one of the Center's primary purposes is to have our consultants provide individual medication consultations to the Center's visitors for a small professional fee. For $5.00, you can have a personalized response to your medication question. Your question may be submitted to the Center via the form below, via e-mail or by regular U.S. mail. A response will be sent directly to you. Obviously, we cannot answer every type and style of medication question for the small fee listed above. Some questions would ideally require your medical and pharmaceutical records to be reviewed. This type of review and response is impossible via the present system. We will recommend to you other
Pharmacist Frequently Asked Questions

1. I take a number of prescription and non-prescription drugs and find it difficult to remember all of them. What can I do?
You should make a list of your medications and medical conditions and carry it in your wallet or purse. The list should include:
- brand name of the drug
- generic name of the drug
- strength of the drug
- dose you take
- directions
- conditions for which the medication is used
- drug allergies
- doctor's name and phone number
- pharmacy's name and phone number

This list is useful when discussing your treatment with your doctor and is especially important in case of an emergency.

2. When I visit a new doctor or pharmacy is there anything I need to tell them so I can get the best care possible?
It's important that your doctor and pharmacist know the name, strength, and directions for ALL of the drugs that you take. Be sure to include both prescription AND non-prescription drugs, for example, cold remedies, pain medications, and nutritional...
Ask a Pharmacist

Alan Lukazewski, Registered Pharmacist (R.Ph.), a Certified Diabetes Educator (CDE) and AgeNet's geriatric drug specialist. Recognizing that medication management is one of the top concerns of older adults and/or their caregivers, Alan will answer questions about the use and misuse of drugs specific to the needs of older adults.

To ask Alan a question, simply fill out the form below and send it to Ask a Pharmacist. Alan will review all submissions and answer selected questions in his "Ask a Pharmacist" advice column. However, due to the nature of the Internet and the potential for error, everyone wishing to submit a question and/or read Alan's column should click here to read the information disclaimer.

Dear Alan,

Name:

Email Address: 

(required)

Send to Ask a Pharmacist  |  Reset Form

http://www.agenet.com/
Geriatric Medication Assessment

The Medication Assessment is designed to be used by either older adults (age 50 plus) or caregiving children of older adults. It provides a comprehensive and confidential review by an AgeNet pharmacist of all prescription and over the counter medications a person is taking to identify potential adverse drug reactions. Many signs, symptoms or complications that we commonly associate with the effects of aging may actually be related to adverse drug reactions and/or drug interactions that can be minimized and/or avoided with proper medication management. The final product is a report to be shared with your physician, which identifies potential interactions, side effects or medications considered inappropriate for older adults and known alternatives. Individuals should share the report with their physician so an appropriate and informed response can be pursued for any issues that are identified.

To receive an AgeNet Medication Assessment, complete and submit the form below. The cost is $45. When you press the "Submit Medication Assessment" button you will be taken to our secure commerce server for check out.

Disclaimer

For you to obtain an accurate assessment which delivers the maximum benefit, please fill in all areas on this form. The information provided will remain confidential. Upon completion of the assessment by an AgeNet pharmacist you will receive a comprehensive reply which addresses your concern.

The top portion of the form is devoted to the person requesting the medication assessment. This is the individual that will receive the completed medication assessment.

Name: ___________________________
(of person requesting assessment)
The Medication Information Line
For The Elderly
(M.I.L.E.)

Tips for putting in Eye Drops

Sleep Hygiene / Dry Mouth

Why was I given this drug? How do I take it? Will there be side effects? How will I know if the drug is working? Are there any foods, drinks, or other drugs I should avoid with the medication?

Do you have any questions or concerns about the medication you, or someone close to you is taking? If so, our experienced licensed pharmacists can help answer these questions.

We have designed a telephone line called "The Medication Information Line For The Elderly" to supplement the information given by your own pharmacists and physicians. We are located in the Faculty of Pharmacy at the University of Manitoba, and have been in operation since 1985. Questions about your medication and proper drug use practices can be asked over the phone to our pharmacist consultants Monday to Friday from 9am to 3pm. In the event that our pharmacist consultant is busy on the telephone line, callers are encouraged to leave a message with their name and telephone number; this will allow the pharmacist to return the call at the first available opportunity. People calling outside the times of regular operation are also encouraged to leave their name and telephone number, and their inquiries will be answered on the next working day.

If you have questions or concerns about the medication that you, or somebody close to you is taking, please call us:

The Medication Information Line for the Elderly
Faculty of Pharmacy
University of Manitoba

phone: 474-6493 or 261-3111
toll free for rural Manitoba:
1-800-432-1960 extension 6493

MILE e-mail address:
mile@bldgumsu.lan1.umanitoba.ca

Medication Information Line for the Elderly

Tips For Putting in Eye Drops

"I have trouble putting drops in my eyes. Do you have any suggestions to make it easier?"

This is a very common problem for people who use eyedrops. There are several different approaches.
APPENDIX E
Las penicilinas se usan para tratar las infecciones causadas por bacterias. No tendrán efecto para resfíos, gripe u otras infecciones virales. Algunas penicilinas se usan para prevenir las infecciones de estreptococo en pacientes con una historia de enfermedad de corazón reumática.

Si cualquier información en este folleto le causa inquietud o si desea más información acerca de su medicamento y su uso, consulte con su médico, enfermera o farmacéutica.

Acuérdese de mantener ÉSTE y todos los demás medicamentos fuera del alcance de niños y nunca comparta sus medicamentos con otros.

ANTES DE USAR ESTE MEDICAMENTO

Dígale a su médico, enfermera o farmacéutica si...
- es alérgico a cualquier otro medicamento, ya sea con o sin receta;
- está tomando cualquier otro medicamento con o sin receta, en especial píldoras anticonceptivas que contienen estrógeno, colestiramina, colestipol, o probenecida;
- tiene cualquier otro problema médico, en especial mononucleosis, enfermedad del riñón o histórico de, trastornos de sangrado o enfermedad del estómago o del intestino (tal como colitis, incluso colitis causada por antibióticos).

USO CORRECTO DE ESTE MEDICAMENTO

Es mejor tomar la mayoría de las penicilinas con un vaso lleno (8 onzas) de agua con el estómago vacío; sin embargo, es mejor tomar algunas con un bocado o con una comida. Siga las instrucciones de su médico o farmacéutica acerca de cómo usar su medicamento.

Siga tomando este medicamento por el plazo completo del tratamiento aunque empiece a sentirse mejor después de unos días.; No deje pasar ninguna de las dosis. Esto es de particular importancia si tiene una infección de estreptococo ya que más adelante se pueden desarrollar problemas del corazón si su infección no se cura por completo.

Si se le pasa una dosis de este medicamento, témela lo antes posible. Sin embargo, si es casi hora para su próxima dosis, déjela pasar la dosis olvidada y vuelva a su horario normal de dosificación. No doble las dosis.

PRECAUCIONES MIENTRAS ESTÉ USANDO ESTE MEDICAMENTO

Si sus síntomas no mejoran dentro de los pocos días, o si empeoran, consulte con su médico.

Este medicamento puede causar diarrea en algunos pacientes. La diarrea severa puede ser un síntoma de un efecto secundario serio. No tome ningún medicamento para la diarrea sin consultar primero con su médico.

Diabéticos
- Algunas penicilinas pueden causar resultados falsos en algunos análisis de azúcar en la orina. Consulte con su médico antes de cambiar su dieta o la dosificación de su medicamento para la diabetes.

Este medicamento no debe ser dado a otras personas o usado para otras infecciones a menos que su médico le haya indicado lo contrario.
Efectos secundarios que deben ser informados a su médico en seguida

Deje de tomar este medicamento y obtenga ayuda de emergencia en seguida si nota:

**Menos comunes** – Respiración rápida o irregular; fiebre; dolor de las articulaciones; aturdimiento o desmayo (repentino); inflado o hinchazón alrededor de la cara; piel roja y escamada; falta de aire; erupción, ronchas o picazón de la piel

**Otros efectos secundarios que deben informarse a su médico en seguida**

**Raros** – Calambres en el abdomen o estómago (severos); sensibilidad en el abdomen; convulsiones (ataques); disminución en la cantidad de orina; diarrea (acuosa y severa), que también puede ser sangrienta; fiebre o dolor de garganta; náuseas o vómitos; desangramiento o magullamiento no usuales ojos o piel amarillos

Algunos de los efectos secundarios enumerados arriba pueden ocurrir hasta varias semanas después de que deje de tomar este medicamento.

**Efectos secundarios que usualmente no necesitan atención médica**

Estos posibles efectos secundarios pueden desaparecer durante el tratamiento; sin embargo, si continúan o causan molestia, consulte con su médico, enfermera o farmacéutica.

**Más comunes** – Diarrea (leva); dolor de cabeza; boca o lengua dolorida; parches blancos en su lengua o boca

Otros efectos secundarios no detallados más arriba pueden también ocurrir en algunos pacientes. Si nota cualquier otro efecto, consulte con su médico, enfermera o farmacéutica.
propositos de informacion
Amoxicillin 250 mg Capsules USP
TAKE 1 CAP FOUR TIMES DAILY UNTIL GONE
Qty: 0 Refills: 0
Rx#: 03/18/1999

La informacion en este documento ha sido desarrollada especificamente para propositos de informacion y no puede ser usada para otra persona.

ACERCA DE SU MEDICAMENTO

Las penicilinas se usan para tratar las infecciones causadas por bacterias. No tendran efecto para resfrios, gripe u otras infecciones virales. Algunas penicilinas se usan para prevenir las infecciones de estreptococo en pacientes con una historia de enfermedad de coraz/Sn reumatica.

Si cualquier informaci/Sn en este folleto le causa inquietud o si desea mas informaci/Sn acerca de su medicamento y su uso, consulte con su medico, enfermera o farmaceuta. Acud/Sese de mantener este y todos los dem/Ses medicamentos fuera del alcance de nifios y nunca comparta sus medicamentos con otros.

ANTES DE USAR ESTE MEDICAMENTO

D/gle a su medico, enfermera o farmaceuta si...
- es al/rgico a cualquier otro medicamento, ya sea con o sin receta;
- est/S embarazada o pliosa quedar embarazada mientras est/S usando este medicamento;
- est/S dando de mamar;
- est/S tomando cualquier otro medicamento con o sin receta, en especial p/ldoras anticonceptivas que contienen estr/rgeno, colestiramina, colestipol, o probenecid;
- tiene cualquier otro problema médico, en especial mononucleosis, enfermedad del ri/ón o his/Storial de, trastornos de sangrado o enfermedad del estomago o del intestino (tal como colitis, incluso colitis causada por antibScticos).

USO CORRECTO DE ESTE MEDICAMENTO

Es mejor tomar la maioria de las penicilinas con un vaso lleno (8 onzas) de agua con el est/Smago vaci/S; sin embargo, es mejor tomar algunas con un bocadillo o con una comida. Siga las instrucciones de su medico o farmaceuta acerca de como usar su medicamento.

Siga tomando este medicamento por el plazo completo del tratamiento aunque empiece a sentirse mejor despues de unos dias.; No deje pasar ninguna de las dosis. Esto es de particular importancia si tiene una infecci/Sn de estreptococo ya que mas adelante se pueden desarrollar problemas del coraz/Sn si su infecci/Sn no se cura por completo.

Si se le pasa una dosis de este medicamento, t/omela lo antes posible. Sin embargo, si es casi hora para su proxima dosis, deje pasar la dosis olvidada y vuelva a su horario normal de dosificaci/Sn. No doble las dosis.

PRECAUCIONES MIENTRAS EST/S USANDO ESTE MEDICAMENTO

Si sus s/Sntomas no mejoran dentro de los pocos dias, o si empeoran, consulte con su medico.

Este medicamento puede causar diarrea en algunos pacientes. La diarr/ea severa puede ser un s/Sntoma de un efecto secundario serio No tome ning/Sn medicamento para la diarrea sin consultar primero con su medico.

Diab/Scticos
- Algunas penicilinas pueden causar resultados falsos en algunos an/Slisis de az/ucar en la or/Sina. Consulte con su medico antes de cambiar su dieta o la dosificacion de su medicamento para la diabetes.

Este medicamento no debe ser dado a otras personas o usado para otras infecciones a menos que su medico le haya indicado lo contrario.

EFECTOS SECUNDARIOS QUE DEBEN INFORMARSE A SU MEDICO EN SEGURO

Menos comunes - Respiraci/Sn r/Spida o irregular; fiebre; dolor de las articulaciones; aturdimiento o desmayo (repentino); inflado o hinchaz/Sn alrededor de la cara; piel roja y escamada; falta de aire; erupci/Sn, ronchas o picaz/Sn de la piel

Otros efectos secundarios que deben informarse a su medico en seg/Sura

Raros - Calambres en el abdomen o estomago (severos); sensibilidad en el abdomen; convulsiones (ataques); disminuci/Sn en la cantidad de or/Sina; diarrea (acuosa y severa), que tambi/Sn puede ser sangrienta; fiebre o dolor de garganta; n/Saseas o v/Smitos; desangramiento o magullamiento no usuales ojos o piel amarillos

La informaci/Sn en este volante ha sido seleccionada del USP para ser usada como una ayuda educativa y no incluye todos los usos, acciones, precauciones, efectos secundarios o interacciones posibles de este medicamento. No intente servir de conselho m/ndico para problemas individuales. © 1996 USPC, Inc.
**Propositos de Información**

Amoxicilina 500 mg Capsulas USP

La información en este documento ha sido desarrollada específicamente para propósitos de información y no puede ser usada para otra persona.

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**Posibles Efectos Secundarios de este Medicamento**

**Efectos secundarios que deben ser informados a su médico en seguida**

Deje de tomar este medicamento y obtenga ayuda de emergencia en seguida si nota:

**Menos comunes** – Respiración rápida o irregular; fiebre; dolor de las articulaciones; aturdimiento o desmayo (repentino); inflado o hinchazón alrededor de la cara; piel roja y escamada; falta de aire; erupción, ronchas o picazón de la piel

**Otros efectos secundarios que deben informarse a su médico en seguida**

**Raros** – Calambres en el abdomen o estómago (severos); sensibilidad en en abdomen; convulsiones (ataques); disminución en la cantidad de orina; diarrea (acuosa y severa), que también puede ser sangrienta; fiebre o dolor de garganta; náuseas o vómitos; desangramiento o magullamiento no usuales ojos o piel amarillos

Algunos de los efectos secundarios enumerados arriba pueden ocurrir hasta varias semanas después de que deje de tomar este medicamento.

**Efectos secundarios que usualmente no necesitan atención médica**

Estos posibles efectos secundarios pueden desaparecer durante el tratamiento; sin embargo, si continúan o causan molestia, consulte con su médico, enfermera o farmaceuta.

**Más comunes** – Diarrea (leva); dolor de cabeza; boca o lengua dolorida; parches blancos en su lengua o boca

Otros efectos secundarios no detallados más arriba pueden también ocurrir en algunos pacientes. Si nota cualquier otro efecto, consulte con su médico, enfermera o farmaceuta.

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La información en este volante ha sido seleccionada del USP para ser usada como una ayuda educativa y no incluye todos los usos, acciones, precauciones, efectos secundarios o interacciones posibles de este medicamento. No intente servir de consejo médico para problemas individuales. © 1996 USPC, Inc.