



PREVENTIVE GERIATRICS

Objectives

To gain understanding of the various disease prevention strategies and their relationship to the care of the elderly;

To understand the relationship between cultural values and preventive strategies, including those affecting the care of older patients and their families;

To learn how to find and use up-to-date, evidence-based preventive intervention guidelines;

Overview

As a physician considering various prevention programs for older patients, it is important to separate the well elderly from the frail elderly populations. While physical disability is found in a small percentage of those less than 70 years of age, it is much more prevalent in those over 80 years. Between 70 and 85 years of age, depending upon frailty and individual values, prevention usually shifts - from extending life to preserving or extending quality of life. Continuing or discontinuing various screening and prevention strategies should be discussed with patients or caregivers since the potential risks may outweigh the potential benefits.

Prevention in the elderly focuses on the following areas:

- Primary and Secondary Prevention of Disease
- Tertiary Prevention
- Prevention of Frailty
- Prevention of Accidents
- Prevention of Iatrogenic Complications

Each of these areas will be discussed in some detail in the sections which follow. Not all older persons will benefit from every prevention strategy. The choice and effectiveness of a particular intervention or screening tool will depend upon the patient's physical health, functional ability,

cognitive status, as well as patient's personal choice. Primary and secondary prevention of disease and of frailty are most beneficial for the 60% to 70% of elderly who are considered healthy. These patients have minimal or no chronic disease and are functionally independent. Tertiary prevention of disease and prevention of frailty are important for the chronically ill elderly who generally have one or more chronic disorders, are usually functionally independent or minimally dependent.

“The goal of preventive medicine in older people should be not only reduction of premature morbidity and mortality but preservation of function and quality of life. Attempts to prevent diseases of old age should start in youth; the older the patient, the less likely the possibility or value of primary and secondary prevention, and the greater the stress must be on tertiary prevention....Emphasis should be on offering the best proven and most effective interventions to the individuals at highest risk of important problems such as cardiovascular diseases, malignancies, infectious and endocrine diseases, and other important threats to function in older people.”¹

Many preventive strategies apply to all elderly persons, such as exercise, immunizations, nutrition and accident prevention. Healthy elderly should visit their primary care physicians at least annually. A regular exercise program and a healthy diet, as well as other disease prevention behaviors will help reduce disease incidence and frailty as well as reduce hospitalizations and functional decline.

US Preventive Services Task Force (USPSTF)

The [US Preventive Services Task Force \(USPSTF\)](#) is an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services. While most of the recommendations are for both child and adult populations, there are also recommendations for older patients. This web site is a very important one for physicians and physicians-in-training who wish to remain up-to-date on preventive strategies.

For persons who are not symptomatic this type of critical review is particularly important, especially if the intervention has the potential to be harmful. The Task Force also makes available the [Guide to Clinical Preventive Services, 3rd Edition, 2000-2003](#). AHRQ has also published research findings on elderly healthcare at: <http://www.ahcpr.gov/research/elderix.htm>. Including a task force report on “Improving the Health Care of Older Americans” <http://www.ahcpr.gov/research/olderam/>.

The [National Guideline Clearinghouse™ \(NGC\)](#) is a comprehensive database of evidence-based clinical practice guidelines and related documents produced by the [Agency for Healthcare Research and Quality \(AHRQ\)](#) (formerly the Agency for Health Care Policy and Research [AHCPR]), in partnership with the [American Medical Association \(AMA\)](#) and the [American Association of Health Plans \(AAHP\)](#).

The mission of the National Guideline Clearinghouse (NGC) is to provide physicians, nurses, other health care providers, health plans, integrated delivery systems, purchasers and others an accessible mechanism for obtaining objective, detailed information on clinical practice guidelines and to further their dissemination, implementation and use.

Key components of NGC include:

- Structured abstracts (summaries) about each guideline and how it was developed;
- A utility for comparing attributes of two or more guidelines in a side-by-side comparison;
- Syntheses of guidelines covering similar topics, highlighting areas of similarity and difference;
- Links to full-text guidelines, where available, and/or ordering information for print copies;
- An electronic forum, NGC-L for exchanging information on clinical practice guidelines, their development, implementation and use;
- Annotated bibliographies on guideline development methodology, implementation, and use.

Clinical Prevention Initiative (CPI) of the [New Mexico Medical Society](#) and the [New Mexico Department of Health](#)

The CPI was created to promote and support practice commitment and system development for selected high priority services. The goal is to facilitate integration of preventive care in physician offices and provide better services to patients across New Mexico. Prevention services were ranked based on the burden of suffering and the effectiveness of each preventive measure. The seven interventions that CPI has focused on thus far are:

1. Childhood Immunizations
2. Chlamydia Screening and Treatment
3. Colorectal Cancer Screening
4. Mammography Screening and Follow-up
5. Pneumococcal Vaccination for Adults
6. Problem Drinking Screening and Intervention
7. Tobacco Use Prevention and Cessation

Cultural Acceptability of Prevention Strategies:

It is important to not assume anything when discussing various prevention strategies and their potential impact upon your patient. “Do not assume that the apparently Caucasian patient sitting in the examining room or admissions office isn’t one-quarter Navajo and strongly adheres to traditional tribal customs; do not assume that the Orthodox Jewish person sitting with you does not believe in organ donation or transplantation.”² As with other areas of medicine, particularly advanced directives, it is important to ask your patient the following set of questions²:

1. What are your views about self-determination in health care decision-making?
2. Do you want to know?
3. Who should/must know?
4. Who should/must make the decisions?
5. Is the issue that you cannot make the decision or that you choose not to?

“It is critical to be sensitive, empathetic, and creative. Take time. Learn to listen, especially to that which is not said².”

“Another obvious factor is the educational level of the patient, particularly if the information is delivered in writing. Providers must determine the patient's first language. If the AI/AN language is primarily spoken, and this is likely with the elder population, then effective medical translators must be employed who understand the medical terms that are used, are aware of the limits of the communication process (i.e., the translator must not interpose their own words/beliefs into the communication) and understand the ethics of translation. Knowledge of the race and cultural beliefs of the translator are also critical.”³ It should also be noted that translators should not be a relative.

The educational level and language comfort is also important with other groups in New Mexico, this is particularly true with older Hispanic patients. An interpreter is an important member of the health care team.

TABLE 1: PREVENTION OF DISEASE AND DISABILITY IN THE ELDERLY

<u>Type of Prevention</u>	<u>Characteristics</u>
A. Primary Prevention	The risk of disease is reduced before it starts by eliminating or reducing risk factors
B. Secondary Prevention	Disease is detected and treated at an early asymptomatic stage, minimizing morbidity and mortality
C. Tertiary Prevention	An existing, usually chronic disease is managed in such a manner as to prevent further functional loss. Disease management is enhanced through disease-specific practice guidelines and protocols
D. Frailty Prevention	Preventing or reducing the loss of physiologic reserves that make a person susceptible to disability from minor stresses
E. Accident Prevention	Preventing accidents and injury from falls, driving, hazards in the home and other factors
F. Prevention of Iatrogenic Complications	Identifying patients at high risk and determining treatment or corrective action

Primary and Secondary Prevention in the Elderly

The goal of primary prevention of disease is to reduce the risk of a disease or condition before it starts. This would include the following three categories:

- Immunoprophylaxis** which prevents disease through vaccination
- Chemoprophylaxis** which prevents disease through drug therapy
- Counseling** which may prevent or reduce the risk of disease through behavioral change.

Secondary prevention of disease detects and treats disease at an early and asymptomatic stage, reducing morbidity and mortality.

A primary source of information regarding the efficacy of preventive interventions is the U.S. Prevention Services Task Force (USPSTF) - <http://www.ahcpr.gov/clinic/uspstfix.htm>. This Task Force has set a critical standard for reviewing preventive interventions and provides recommendations based on the weight of the evidence. The Advisory Committee on Immunization Practices (ACIP) of the U.S. Public Health Service also provides important information on immunizations - <http://www.cdc.gov/nip/publications/ACIP-list.htm>.

Screening can be classified as a primary or secondary preventive measure. It is used to detect risk factors, which may be altered to prevent disease, or to detect disease in asymptomatic persons, who can then be treated early. The screening measures used most frequently for elderly patients are including in the following tables. General and specific screening information relevant to older persons is also available at <http://www.ahcpr.gov/research/elderix.htm>

Principles of Screening: Decisions about screening are a matter of individual choice. As expressed in an article by H. Gilbert Welch, the choice hinges on the probability of various outcomes and how patients feel about them. Screening has multiple effects on patients. A few may have their lives saved, a few will die (of cancer) anyway. Many more will face testing cascades and uncertainty, some will be treated unnecessarily, and a few may die from treatment. In short, for many patients, whether or not to be screened is a close call.⁴

TABLE 2a. PRIMARY PREVENTION – IMMUNIZATIONS

Influenza: Influenza infections cause substantial morbidity and mortality among elderly persons.

Recommendation: All adults over the age of 65 should receive influenza vaccine annually. In nursing homes or other congregate living situations for the elderly, prophylactic amantadine or rimantadine is appropriate with an outbreak of influenza. Dosages of amantadine need to be adjusted for age and renal function ~ 100 mg per day would be the usual dosage. Rimantadine, though more expensive, has fewer side effects in older adults.

Cautions: Serious adverse reactions are rare in community-dwelling elders. Health-care workers, including physicians and nursing home staff, should also be immunized.

Pneumococcal Infection: Streptococcus pneumoniae infection is an important cause of pneumonia in the elderly and is associated with significant morbidity and mortality. Pneumococcal infection accounts for more deaths than any other vaccine preventable bacterial disease and, when associated with sepsis, carries a high mortality rate in elderly patients.

Recommendation: Those 65 and over should also receive a single dose of pneumococcal polysaccharide vaccine. Revaccination should be strongly considered greater than or equal to 6 years after the first dose for those at highest risk of a) fatal pneumococcal disease (such as asplenic patients) or b) rapid decline in antibody levels (e.g., transplant recipients or those with chronic renal failure or nephrotic syndrome). For those immunized when younger than 65, ACIP recommends a single revaccination if 5 or more years have elapsed.

Additional information is available from the [New Mexico Medical Society](#). Go to CPI - # 5. Pneumococcal Vaccination for Adults. There is downloadable information, including the New Mexico Clinical Prevention Initiative Pneumococcal Fact Sheet, Updated October 2004.

Tetanus and Diphtheria: While rare in the United States, tetanus and diphtheria have the potential for serious morbidity and mortality and are largely preventable.

Recommendation: The [US Preventive Services Task Force \(USPSTF\)](#) recommends that all older adults should have completed a primary series of diphtheria and tetanus toxoids. If needed, a primary series for adults is three doses of preparations containing diphtheria and tetanus toxoids; the first two doses should be given at least 4 weeks apart and the third dose 6-12 months after the second. Those who have completed a primary series should receive a booster dose every 10 years. Td should be used to provide protection against both diseases. Persons with unknown or uncertain histories of receiving diphtheria or tetanus toxoids should be considered unvaccinated and should receive a full three-dose primary series of Td. Many elderly women have never been immunized and the vast majority of men who have been in the armed services were immunized.

Table 2b. Primary Prevention – Chemoprophylaxis

Aspirin: Aspirin (81 mg) is effective in preventing stroke in those with transient ischemic attacks and in preventing nonfatal myocardial infarction and cardiovascular mortality in those with prior myocardial infarction or unstable angina. Some have inferred that high-risk patients without any evidence of disease should also take a daily aspirin.

Recommendation: Patients with multiple risk factors for myocardial infarction might appropriately be counseled about the potential benefits and risks of aspirin prophylaxis. [The US Preventive Services Task Force \(USPSTF\)](#) does not recommend for or against aspirin use in the primary prevention of myocardial infarction in asymptomatic men or women. Patients with existing coronary disease or transient ischemic attack or previous stroke are candidates for therapy if there is no contraindication.

Table 2c. Primary Prevention - Counseling

Smoking: Tobacco use is the leading cause of preventable death in the United States. This is a clearly modifiable risk factor for cardiovascular, pulmonary, gastrointestinal diseases, and malignancies. Quitting smoking reduces pulmonary dysfunction and the risk of myocardial infarction and death in all patient populations, including older adults. Risk for mortality substantially decreases even in those who quit after age 70.

Recommendation: Smokers who are identified should be counseled about the benefits of quitting and, if amenable, encouraged to set a quit date. Counseling and provision of assistance (e.g. nicotine patch, gum, slow release bupropion or Zyban (Wellbutrin)) by health providers may significantly improve abstinence rates. Physicians should question whether patients have smoked in the past 3 months. Ongoing support and encouragement is important.

The New Mexico Medical Society and Department of Health, with funding from the Tobacco Use Prevention and Control Program, have developed educational material for primary care physicians and healthcare professionals on Tobacco Use Prevention and Cessation. This information, in downloadable form is available from: <http://www.nmms.org/>. Go to CPI (Clinical Prevention Initiative) and #7 is Tobacco Use Prevention and Cessation. Excellent downloadable information is available for practitioners on smoking prevention and cessation. There is also information regarding on-line continuing medical education from the Center for Tobacco and Research Intervention at the University of Wisconsin Medical School in Madison. The American Lung Association has provided additional information on smoking and older adults ([Fact Sheet: Smoking Among Older Adults](#)).

Physical Activity: Lifestyle, particularly physical activity level, influences the risk of cardiac disease and death. Sedentary life style is a risk factor as significant as hypertension and smoking. Studies suggest that physical exercise has value in the primary prevention of heart disease and death.

Recommendation: Regular exercise has the potential to reduce the risk of cardiovascular disease, osteoporosis, hip fracture, and decline in physical function. In preventing cardiovascular disease, increased benefit is associated with increased exercise intensity. The [USPSTF](#) notes that although there is excellent evidence as to the benefits of physical activity, there is limited evidence that counseling by physicians can increase physical activity in the population at large. Nevertheless, clinicians should counsel older people to regularly engage in moderate exercise, as the benefits appear to outweigh the risks. Exercise should be considered a particularly promising preventive measure in many areas of geriatric care.

Diet: As people age, energy needs decrease and food intake declines. As a result, the elderly become susceptible to nutrient deficiencies. In those aged 75 or 80 and over, protein-caloric malnutrition becomes an important concern.

Recommendation: The [US Preventive Services Task Force \(USPSTF\)](#) recommends that physicians counsel all patients to reduce their consumption of fats and increase their consumption of fruits, vegetables, and grain products containing fiber. These recommendations may not be appropriate for all elders, especially the old-old. In addition, there is little evidence to suggest that physicians can influence change in dietary behavior through counseling.

Clinicians should recommend routine calcium and vitamin D supplements, which has demonstrated effectiveness in reducing osteoporotic fractures in older adults.

Caution: Restriction in diet may affect quality of life for those 90 years of age and older and there may be no long-term advantage to restricting dietary fat. In patients at significant risk for malnutrition, restricted diets should be avoided if at all possible.

Injury Prevention: Nearly half of all unintended injury-related deaths are due to motor vehicle crashes. The risk of injury and death is higher for the elderly, even though they drive fewer miles than younger drivers. Falls lead all causes of unintended injury deaths in older persons and burns and scald injuries are also important causes of death and disability.

Recommendation: While there is no good evidence that counseling by clinicians is effective for preventing injury from any of these causes, the USPSTF makes the following recommendations for older people:

Older patients should be counseled to:

- * wear seat belts when driving or riding in a car
- * avoid alcohol use when driving
- * use smoke detectors
- * avoid hazardous use of cigarette (e.g. in bed)
- * reduce water temperature to 120 or 130 degrees

They should also be counseled on measures to reduce the risk of falling, including exercise, avoiding risky behavior, and environmental hazard reduction. Clinicians should monitor and adjust medications to reduce fall risk.

Table 3. Secondary Prevention of Disease in the Elderly

a. CARDIOVASCULAR DISEASE

Cholesterol and Lipid Disorders: Little direct evidence exists about the benefits or disadvantages of screening those aged 65 or older. Cholesterol is not as strongly related to coronary artery disease after age 70, although it could account for a significant proportion of morbidity given the high prevalence of such disease among those 70 and over.

Recommendation: Regular exercise has the potential to reduce the risk of cardiovascular disease, osteoporosis, hip fracture, and decline in physical function. In preventing cardiovascular disease, increased benefit is associated with increased exercise intensity. The [USPSTE](#) notes that although there is excellent evidence as to the benefits of physical activity, there is limited evidence that counseling by physicians can increase physical activity in the population at large. Nevertheless, clinicians should counsel older people to regularly engage in moderate exercise, as the benefits appear to outweigh the risks for most elderly. Exercise should be considered a particularly promising preventive measure in many areas of geriatric care.

Caution: Dietary restriction should be avoided in those at risk for undernutrition.

Hypertension: There is demonstrated benefit of detection and treatment of systolic and diastolic hypertension in those aged 60 to 80. The risk from hypertension increases with increasing blood pressure for all ages. Little evidence exists about the long-term outcome of treatment of hypertension in those aged 80 and over.

Recommendations: Screening for hypertension should occur at each visit or every 1 to 2 years in all elderly persons who are candidates for active medical treatment. Hypertension in the old-old, particularly those with multiple comorbidities, should be treated cautiously to avoid complications such as orthostatic hypotension, which may contribute to falls.

b. CANCER

Breast Cancer: Breast cancer is the 2nd leading cause of female cancer deaths in both the United States and in New Mexico. 1 in 8 women will develop breast cancer over their lifetime if they live to 80 years of age. Risk factors associated with breast cancer include....

- being female
- increasing age
- having a family history of breast cancer
- non-parity or first pregnancy after age 30

On average, a mammographic screening discovers breast cancer 1.7 years before a lump is detectable by breast exam. Breast cancer 5-year survival is 96% when it is detected *in situ* or locally, this decreases to 21% when the cancer has metastasized. Yearly mammography screening can prevent 15-30% of breast cancer deaths in females 40 and over.

The U.S. Preventive Services Task Force (USPSTF) recommendations on screening for breast cancer and the supporting scientific evidence is available in the article, "[Breast Cancer Screening: Summary of the Evidence](#)," and in the Systematic Evidence Review on this topic, prepared for the U.S. Preventive Services Task Force by the AHRQ-supported [Evidence-based Practice Center at Oregon Health & Science University](#). These documents, along with reprints, can also be obtained [online](#), through the National Guideline Clearinghouse™ (<http://www.guideline.gov/>).

To update their recommendations on screening for breast cancer, the USPSTF reviewed the evidence regarding the effectiveness of mammography, clinical breast examination, and breast self-examination in reducing breast cancer mortality. The USPSTF did not review the evidence regarding genetic screening, surveillance of women with prior breast cancer, or formal evaluation of new screening modalities that have not been studied in the general population.

Recommendation: The Center for Disease Control and Prevention, National Cancer Institute, the U.S. Health and Human Services and the U.S. Preventive Services Task Force (USPSTF) recommends screening mammography, with or without clinical breast examination (CBE), every 1-2 years for women aged 40 and older. The USPSTF found fair evidence that mammography screening every 12-33 months significantly reduces mortality from breast cancer. Evidence is strongest for women aged 50-69, the age group generally included in screening trials. For women aged 40-49, the evidence that screening mammography reduces mortality from breast cancer is weaker, and the absolute benefit of mammography is smaller, than it is for older women. Most, but not all, studies indicate a mortality benefit for women undergoing mammography at ages 40-49, but the delay in observed benefit in women younger than 50

makes it difficult to determine the incremental benefit of beginning screening at age 40 rather than at age 50.

The absolute benefit is smaller because the incidence of breast cancer is lower among women in their 40s than it is among older women. The USPSTF concluded that the evidence is also generalizable to women aged 70 and older (who face a higher absolute risk for breast cancer) if their life expectancy is not compromised by comorbid disease. The absolute probability of benefits of regular mammography increase along a continuum with age, whereas the likelihood of harms from screening (false-positive results and unnecessary anxiety, biopsies, and cost) diminish from ages 40-70. The balance of benefits and potential harms, therefore, grows more favorable as women age. The precise age at which the potential benefits of mammography justify the possible harms is a subjective choice.

Additional information is available from:

1. The [New Mexico Medical Society](#). At this site go to CPI (Clinical Prevention Initiative) and #4 is Mammography Screening and Follow-Up. Included is information on Breast Imaging and Reporting Data System, "Frequently Asked Questions on Breast Cancer Screening" by the CPI Mammography Intervention Workgroup and links to other resources.
2. [The New Mexico Department of Health: Cancer Programs](#).

Colorectal Cancer: Colorectal cancer is the second leading cause of cancer death in the New Mexico and the United States. According to the [CDC](#), the average annual age-adjusted death rates for colorectal cancer per 100,000 persons, by race, 1997-2001 is as follows

	New Mexico	National
Overall	17.8	20.8
White	18.0	20.3
Black	28.9	28.3
Hispanic	19.7	14.2
Asian/Pacific Islander	-	13.0
American Indian/Alaska Native	9.7	13.9

A person at age 50 has about a 5 percent lifetime risk of being diagnosed with colorectal cancer and a 2.5 percent chance of dying from it; the average patient dying of colorectal cancer loses 13 years of life. Most colorectal cancers occur in persons at average risk, but 20 percent occur among patients with specific risk factors, such as those with a family history of colorectal cancer in a first-degree relative. A small proportion (6 percent) is associated with uncommon genetic syndromes such as familial adenomatous polyposis [FAP] or hereditary nonpolyposis colorectal cancer [HNPCC]. Other persons at increased risk include patients with longstanding ulcerative colitis, persons with previously diagnosed large adenomatous polyps or colorectal cancer, and those with a family history of adenomatous polyps diagnosed before age 60.

Clinical studies have suggested that many of the deaths and new cases may be preventable with appropriate cancer screening. Screening detects early-stage cancers, which can be very curable with surgery, and pre-cancerous polyps, which can be removed at the time of colonoscopy. Less than half of New Mexicans age 50 and older are up to date on their colorectal cancer screening either a recent hemoccult test and/or endoscopy. Two-thirds of the colorectal cancer diagnosed in NM are found at an advanced stage – when the cancers are less curable.

There are few data to determine optimal age for starting or stopping screening. Fecal Occult Blood Testing (FOBT) has been proven effective for persons aged 50-80 and sigmoidoscopy is associated with reduced mortality in persons older than 45. Randomized trials suggest that a life expectancy of at least 5 years may be required to realize the benefits of screening. In addition to the USPSTF, the New Mexico Department of Health and New Mexico Medical Society have created a handbook for health care providers which has information on colorectal cancer epidemiology, screening, treatment, prognosis, resources and reimbursement issues.

Recommendations: The [USPSTF](#) recommends initiating screening at 50 years of age for men and women at average risk for colorectal cancer, based on the incidence of cancer above this age in the general population. In persons at higher risk (for example, those with a first-degree relative who receives a diagnosis with colorectal cancer before 60 years of age), initiating screening at an earlier age is reasonable. For information from the New Mexico Department of Health and New Mexico Medical Society go to the [New Mexico Medical Society](#) web site. Go to CPI (Clinical Prevention Initiative), #3 is Colorectal Cancer Screening. There is excellent downloadable information which was developed in 2002. Medicare pays for a screening colonoscopy at age 65 and every ten years after that.

Expert guidelines exist for screening very high-risk patients, including those with a history suggestive of familial polyposis or hereditary nonpolyposis colorectal cancer, or those with a personal history of ulcerative colitis. Early screening with colonoscopy may be appropriate, and genetic counseling or testing may be indicated for patients with genetic syndromes.

The appropriate age at which colorectal cancer screening should be discontinued is not known. Screening studies have generally been restricted to patients younger than 80 years of age, with colorectal cancer mortality rates beginning to decrease within 5 years of initiating screening. Yield of screening should increase in older persons (because of higher incidence of colorectal cancer), but benefits may be limited as a result of competing causes of death. Discontinuing screening is therefore reasonable in patients whose age or comorbid conditions limit life expectancy.

Cervical Cancer: Every year there are approximately 70 new cases of invasive cervical cancer, and 20 women will die of invasive cervical cancer in New Mexico. Cervical cancer is largely preventable, yet according to the American Cancer Society, an estimated 13,000 new cases of invasive cervical cancer will be diagnosed nationally in 2002 and about 4,100 women will die of the disease. Cervical cancer is preventable and curable if it is detected early; in fact, the occurrence of deaths from cervical cancer has declined significantly over the last 20 to 30 years

Cervical cancer rates are higher among older women; however, cervical intraepithelial neoplasia (or CIN), the precursor lesion to cervical cancer, most often occurs among young women.

Screening women using the Papanicolaou (Pap) test is an important strategy that can prevent cervical cancer from developing most of the time.

Additional information can be found at the [New Mexico Department of Health, Cancer Programs web site](#).

Recommendations: The USPSTF recommends against routinely screening women older than age 65 for cervical cancer if they have had recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer. *Rationale:* The USPSTF found limited evidence to determine the benefits of continued screening in women older than 65. The yield of screening is low in previously screened women older than 65 due to the declining incidence of high-grade cervical lesions after middle age. There is fair evidence that screening women older than 65 is associated with an increased risk for potential harms, including false-positive results and invasive procedures. The USPSTF concludes that the potential harms of screening are likely to exceed benefits among older women who have had normal results previously and who are not otherwise at high risk for cervical cancer. [Recommendations and Rationale](#) and [Systematic Evidence Review](#)

Prostate Cancer: Prostate cancer is the second leading cause of cancer-related death among men in the United States (second to lung cancer). In 2004, the American Cancer Society estimated that there would be 1,690 new cases of prostate cancer will be diagnosed among men in New Mexico and that 220 men would die of prostate cancer in New Mexico. The risk of developing prostate cancer increases beginning at age 40. The probability of developing prostate cancer over the next 10 years is 0.17 percent for men aged 40, 2 percent for men aged 50, and 6.46 percent for men aged 60.

The CDC National Center for Health Statistics provides the following death rates: The average annual age-adjusted death rates for prostate cancer per 100,000 men, by race, 1997–2001

	<u>New Mexico</u>	<u>National</u>
Overall	29.7	31.5
White	29.8	28.8
Black	62.5	70.4
Hispanic	29.8	23.6
Asian/Pacific Islander	-	13.0
American Indian/Alaska Native	20.5	20.2

The burden of prostate cancer varies among different racial and ethnic groups. African American men have about a 60 percent higher incidence rate and a 2-fold higher mortality rate from prostate cancer than non-Hispanic white men. Compared with non-Hispanic white men, mortality from prostate cancer is 35 percent lower in Hispanics and 40 percent lower in Asian Americans and Pacific Islanders.

Although prostate cancer is a major cause of cancer death, many more men are diagnosed with this cancer than die from it. Men in the United States have a 15 percent lifetime risk of being diagnosed with prostate cancer but only a 3 percent lifetime risk of dying from the disease. More than 75 percent of all cases of prostate cancer are diagnosed in men older than 65, and 90 percent of prostate cancer deaths occur among men in this age group. The prostate cancer mortality rate declined 19.4 percent between 1991 and 1998, but the causes of this decline are uncertain.

Tumor grade (Gleason grade) appears to be a stronger predictor of prognosis than stage of disease. In studies of untreated prostate cancer, well-differentiated tumors had low rates of metastasis or mortality over 10 years. Progression and mortality were high for poorly differentiated cancers.

Recommendations: The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate specific antigen (PSA) testing or digital rectal examination (DRE). The USPSTF found good evidence that PSA screening can detect early-stage prostate cancer but mixed and inconclusive evidence that early detection improves health outcomes. Screening is associated with important harms, including frequent false-positive results and unnecessary anxiety, biopsies, and potential complications of treatment of some cancers that may never have affected a patient's health. The USPSTF concludes that evidence is insufficient to determine whether the benefits outweigh the harms for a screened population.

If early detection improves health outcomes, the population most likely to benefit from screening will be men aged 50 to 70 who are at average risk, and men older than 45 who are at increased risk (African American men and men with a family history of a first-degree relative with prostate cancer). Benefits may be smaller in Asian Americans, Hispanics, and other racial and ethnic groups that have a lower risk of prostate cancer. Older men and men with other significant medical problems who have a life expectancy of fewer than 10 years are unlikely to benefit from screening.

Cautions: Evidence about the harms of screening per se is scant. The screening process is likely associated with some increase in anxiety, but the number of men affected and the magnitude of the increased anxiety are largely unknown. Some screening procedures cause transient discomfort. Screening may result in harm if it leads to treatments that have side effects without improving outcomes from prostate cancer, especially for cancers that have a lower chance of progressing. Erectile dysfunction, urinary incontinence, and bowel dysfunction are well-recognized and relatively common adverse effects of treatment with surgery, radiation or androgen ablation, but men differ in their responses to these symptoms.

Current models show that men older than 70 to 75 are unlikely to benefit substantially from screening because of their shorter life-expectancy and higher false-positive rates.

U.S. Preventive Services Task Force. [*Screening for Prostate Cancer: Recommendations and Rationale*](#). December 2002. Originally in *Ann Intern Med* 2002;137:915-6. Agency for Healthcare Research and Quality, Rockville, MD.

Skin Cancer: People with light skin are at the highest risk for skin damage from the sun. People with darker skin have a lower risk, but everyone has some health risk as a result of exposure to the sun's ultraviolet radiation. New Mexico has all the qualities needed for intense sun exposure, given the high altitude and relatively low latitude. The intensity of the sun is strongest at higher elevations.

Malignant melanoma, the most serious form of skin cancer, is the most rapidly increasing form of cancer in the United States. The American Cancer Society estimates that 59,580 new cases will be diagnosed in 2005, including 310 in New Mexico.

Skin cancer is largely preventable when sun protection measures are used consistently. Also, most skin cancers can be cured if detected and treated early. Skin cancer is the most common form of cancer in the United States. The three major types of skin cancer are basal cell carcinoma, squamous cell carcinoma, and melanoma. Although basal cell and squamous cell carcinomas can be cured if detected and treated early, these cancers can cause considerable

damage and disfigurement. Melanoma is the deadliest form of skin cancer, causing more than 75% of all skin cancer deaths.

Exposure to the sun's ultraviolet (UV) rays appears to be the most important environmental factor in the development of skin cancer. Although both tanning and burning can increase a person's risk for skin cancer, most Americans do not consistently protect themselves from UV rays.

Recommendations: The [U.S. Preventive Services Task Force \(USPSTF\)](#) concludes that the evidence is insufficient to recommend for or against routine screening for skin cancer using a total-body skin examination for the early detection of cutaneous melanoma, basal cell cancer, or squamous cell skin cancer. *Rationale:* Evidence is lacking that skin examination by clinicians is effective in reducing mortality or morbidity from skin cancer. The USPSTF could not determine the benefits and harms of periodic skin examination.

c. OTHER:

Sensory Disorders: A large number of older people have unrecognized visual and hearing impairments. Visual impairments include impaired visual acuity, macular degeneration, and cataracts. Impaired vision may contribute to accidental injury, especially if the individual is still driving. Undetected glaucoma is also common among the elderly.

Recommendation: Screening of all elderly people for visual acuity with a [Snellen chart](#) or other method is recommended by the USPSTF. There is insufficient evidence to recommend for or against routine funduscopy by primary care physicians. Regarding glaucoma, screening by primary care physicians is of uncertain benefit. Periodic referral to specialists for glaucoma screening would be appropriate.

No controlled study has demonstrated the effectiveness of hearing screening, one randomized controlled trial showed improved quality of life after referral of those persons with hearing impairment for hearing aids. The USPSTF recommends that elderly people be questioned about their hearing, and that otoscopy and audiometric testing be performed on those who indicate problems.

Tertiary Preventive Care and the Elderly

In tertiary prevention, an existing, usually chronic disease is managed appropriately to prevent further functional loss. Disease management is enhanced by the use of disease-specific practice guidelines and protocols. Those published by [the National Guideline Clearinghouse™ \(NGC\)](#) are appropriate and easy to access.

Guidelines on diseases and mental disorders:
<http://www.guideline.gov/browse/browsecondition.aspx>

Guidelines on treatment/intervention: <http://www.guideline.gov/browse/browsetreatment.aspx>

Patients with the following chronic diseases, which are common among the elderly, can potentially benefit from tertiary prevention:

Table 4. Tertiary Prevention of Common Diseases

Arthritis: Osteoarthritis (OA) is the most common chronic disease affecting older persons. The prevalence of OA increases steadily with age and is almost universal at age 80. It is associated with pain, functional disability and being homebound, and accounts for half of all disability among older persons. Identified risk factors include aging, gender, trauma, obesity and genetic factors.

Osteoarthritis arthritis can increase the risk of developing osteoporosis, aerobic and muscular deconditioning, and pressure sores.

Recommendations: The primary goals of therapy are to minimize pain and disability, maintain or improve joint mobility, and educate patients and their families about the disease and its therapy.

Moderate exercise programs may reduce pain and improve functional status of patients with osteoarthritis of the knee and hip.⁵

Acetaminophen, in adequate doses, is as effective as ibuprofen for treating osteoarthritis of the knee and is less toxic.⁶

Vascular Disease: Elderly patients with a history of coronary artery disease, cerebrovascular disease, or peripheral vascular disease (pvd) are at high risk of disabling events.

Recommendations: Risk can be reduced by management of vascular risk factors (e.g., hypertension, smoking, diabetes, atrial fibrillation, hyperlipoproteinemia). Also, a moderate exercise program may be beneficial in pvd patients.

Chronic Obstructive Pulmonary Disease (COPD): This is the fourth leading cause of death in 70 – 90 year olds, and causes significant morbidity with a marked decrease in quality of life. COPD is also a predisposing risk factor for both viral and bacterial infections and is a frequent cause of admissions of elderly patients to intensive care units.

Recommendations: Smoking cessation, appropriate use of inhalers and other drugs, and patient education regarding energy-conserving behavioral techniques can decrease exacerbations of COPD leading to hospitalization. COPD can be significantly improved at any age by simple, cost-effective treatments. It is important to determine the presence of reversible airways obstruction and to develop treatment strategies for control of both acute and chronic respiratory symptoms. Information on COPD can be obtained from the [American Lung Association](#), including free [interactive decision support tools](#).

Prevention of Frailty in the Elderly

Frailty refers to a loss of physiologic reserve that makes a person susceptible to disability from minor stresses. Common features include weakness, weight loss, muscle wasting, exercise intolerance, frequent falls, immobility, incontinence, and chronic disease.

Recommendations: While exercise and a healthy diet are recommended for preventing or reducing frailty, evidence of effectiveness is limited. Older adults who engage in regular aerobic exercise exhibit up to a 50% reduction in mortality and have less functional decline compared to those who are sedentary. Weight training can aid in increasing bone mass while decreasing the risk of falls and fractures. A healthy diet may prevent or reduce the risk of many disorders that contribute to frailty.

Prevention of Accidents

Falls: The elderly are particularly vulnerable to injury from falls. A falls prevention program should be initiated for persons who are at high risk of a fall or already have a history of falls. Counseling elderly patients on specific measures to prevent falls is recommended based on fair evidence that these measures reduce the risk of falls, although the effectiveness of counseling elders to prevent falls has not been adequately evaluated. More intensive individualized multi-factorial intervention is recommended for high-risk elderly patients in settings where adequate resources to deliver such services are available. There is insufficient evidence to recommend for the use of external hip protectors to prevent fall injuries.

Persons with alcohol or drug problems should be identified, counseled and monitored. Those who use alcohol or illicit drugs should be warned against engaging in potentially dangerous activities while intoxicated.

Driving Hazards: The risk of the elderly injuring themselves and others while driving is higher than that for younger persons. This is largely due to age-associated conditions such as slowed reaction time, sensory deficits, and dementia. The management of specific conditions as possible and routine driving tests can minimize risks. Another helpful strategy to minimize risks is to encourage elderly patients to drive during daylight hours and on familiar routes. All elderly should be reminded to use lap and shoulder belts and to refrain from driving when under the influence of alcohol or psychoactive drugs.

Home Hazards: The home can have many hazards, including burns from excessively hot water, the use of electrical and gas appliances is particularly dangerous for demented patients and firearms should be safely stored or removed from the home of patients with diminished capacities. Smoke detectors should be installed and maintained. In some situations it may be necessary for a health care practitioner to visit a patient's home to assess its safety.

Prevention of Iatrogenic Complications

[The Nature and Extent of Medical Injury in Older Patients.](#) This "In Brief" summarizes the findings of the AARP Public Policy Institute Issue Paper, The Nature and Extent of Medical Injuries in Older Patients, by Jeffrey M. Rothschild, MD, and Lucian L. Leape, MD, MPH

The number of injuries due to falls can be reduced by implementing comprehensive programs to identify patients at risk and provide safeguards. Nosocomial infection rates can be reduced by more rigorous application of well-known principles of infection control. Long-established principles of nursing care, if followed, would prevent pressure sores. Such care requires large commitments of staff time. Prevention of delirium begins with identifying patients at risk and promptly instituting preventive measures, such as ensuring effective pain control and ensuring that glasses, hearing aids and dentures are available. Finally, many post-operative complications could be avoided if surgeons, geriatric specialists, and anesthesiologists worked together to establish optimal pre-operative preparation and post-operative care.

The Issue Paper provides a comprehensive overview of the nature and extent of medical injury among older patients, explains why they are at greater risk of suffering iatrogenic injury (injury due to medical treatment) than younger patients are, and presents a number of recommendations on how to lower rates of medical injury in the older patient population.

Key Findings: The Extent of Medical Injury in Older Patients

Medical injuries occur among patients in all age groups, but are substantially more common in older patients. At least 6 percent of hospitalized patients age 65 and older suffer a treatment-caused injury serious enough to result in a measurable disability or to prolong their hospital stay. That is approximately twice the rate of injury in younger patients. Iatrogenic injury in other care settings, such as nursing homes, is also quite widespread. The risk of accidental medical injury increases with advancing age, particularly for falls and surgical complications. About two-thirds of iatrogenic injuries are potentially preventable.

Older patients are particularly susceptible to adverse drug events, falls, nosocomial (hospital-acquired) infections, pressure sores, delirium, and surgical complications.

Adverse drug events (ADEs) are the most common cause of preventable injury among hospitalized older patients. They are a particular problem in nursing homes and occur frequently in outpatient settings as well. Older patients are at greater risk for ADEs due to (1) the normal effects of aging on the body's handling of, and response to, certain pharmaceutical agents; (2) multiple drug use, including the direct effect of using many drugs and the difficulties older patients experience in correctly complying with often complex regimens; (3) inappropriate prescribing by physicians; and (4) age bias by physicians that can lead to a form of inappropriate care unique to this age group: underprescribing.

Falls occur frequently in the nursing home setting; they are less common in hospitalized patients. On average, half of older patients residing in nursing homes suffer falls each year. Progressive instability and difficulty in walking, use of psychotropic medications, visual or neurologic impairment, and dementia make older patients especially vulnerable to falls.

Nosocomial infections occur in 6-17 percent of hospitalized patients, and they are probably equally common in nursing homes. Older patients are particularly at risk for contracting these infections due to declines in their physiologic reserves and declining immunity, and because they commonly have longer hospital stays and multiple treatments.

Pressure sores are a hazard for those who are bedridden or chairbound, as are many older patients in hospitals and nursing homes. Pressure sores are observed in 1.7 million patients annually, mostly in older nursing home patients. Those who suffer from neurologic injury, malnutrition, fecal incontinence, and orthopedic injuries are particularly susceptible.

Delirium is a common affliction in older patients, complicating the course of treatment in 2.3 million patients (mostly older) annually, at a cost of \$4 billion. Many cases of delirium are precipitated by surgical procedures and drug therapy. Delirium in older patients is frequently and mistakenly attributed to aging and dementia.

Finally, *surgical complications* are twice as common in older patients as in their younger counterparts. Half of all surgical complications and three-quarters of operative deaths occur in patients age 65 and older. Older patients are at increased risk of injury due to impaired organ function and multiple chronic diseases, but they are also endangered by delays in needed surgery.

Recommendations: Ways to Avoid Many Older-Patient Injuries

Injuries due to ADEs may be reduced through physician education in geriatric pharmacology, teaching them how to recognize ADEs and distinguish them from "new illnesses," and teaching nonpharmacologic treatment alternatives for conditions such as anxiety and sleep disorders. In addition, ADEs may be reduced through increased pharmacist involvement in medication management, geriatric drug labeling, redesign of hospital medication safety systems, and the use of new technology, such as computerized physician order entry.

The number of injuries due to falls can be reduced by implementing comprehensive programs to identify patients at risk and provide safeguards. Nosocomial infection rates can be reduced by more rigorous application of well-known principles of infection control. Long-established principles of nursing care, if followed, would prevent pressure sores. Such care requires large commitments of staff time. Prevention of delirium begins with identifying patients at risk and promptly instituting preventive measures, such as ensuring effective pain control. Finally, many post-operative complications could be avoided if surgeons, geriatric specialists, and anesthesiologists worked together to establish optimal pre-operative preparation and post-operative care.

In addition to the injury-specific approaches to preventing injury, four general strategies hold promise for reducing the number of medical injuries in all patients, particularly older ones. These strategies include:

- (1) applying error-prevention strategies from other industries, using human factors principles such as standardization, simplification, improved information access, and teamwork training;
- (2) reducing variability in medical care, through the dissemination of guidelines and the enforcement of standards;
- (3) enhancing the roles of geriatric specialists; and
- (4) using riskprofiling and discharge planning, assessing and identifying older patients at risk for iatrogenic complications when they are admitted to the hospital and when they are discharged.

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[American Medical Association \(AMA\) - http://www.ama-assn.org/](http://www.ama-assn.org/)

[American Association of Health Plans \(AAHP\) - http://www.aahp.org/](http://www.aahp.org/)

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[New Mexico Department of Health - http://www.health.state.nm.us/](http://www.health.state.nm.us/)

[American Lung Association's -http://www.lungusa.org/](http://www.lungusa.org/)

[CDC- http://www.cdc.gov/cancer/CancerBurden/nm.htm#national](http://www.cdc.gov/cancer/CancerBurden/nm.htm#national)

Last Revised: April 27
