

Health Promotion For The Nursing Home Patient

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Abstract: Background: The current nursing home population numbers at least 1.5 million and is growing. Although care of the nursing home patient has been emphasized recently, health promotion activities for these patients appear underused. Current recommendations for health promotion are based on expert opinion, because well-controlled studies to support such activities in the elderly are lacking for most practices.

Methods: Using the key words "health promotion" and "preventive health services," cross-referenced with "aged," articles were selected from MEDLINE files from 1979 to the present. Bibliographies of these references were reviewed to select additional references.

Results: A review of the literature shows that although health promotion activities are not appropriate for every nursing home patient, many patients live for years in the long-term care facility and can benefit from health promotion. Health promotion activities can be organized around patients' length of stay. Procedures that should be considered include breast cancer screening, Papanicolaou smears for cervical cancer, hearing and vision loss screening, fall prevention assessment, immunizations, screening for dementia and depression, drug evaluation, screening for thyroid disease, and advance directives.

Conclusions: Physicians who practice in nursing homes should consider health promotion for select nursing home patients. (J Am Board Fam Pract 1992; 127-36.)

One of the hallmarks of medical care in the late twentieth century has been increased emphasis on disease prevention rather than cure of disease already present. Activities to prevent disease and preserve health became known as health maintenance activities or, more recently, health promotion.¹ Health promotion is a better description, as physicians strive not only to preserve their patients' health but to improve their health.

In the United States, about 1.5 million persons reside in nursing homes or personal care homes, defined as facilities certified by Medicare or Medicaid as a skilled nursing facility (SNF) or intermediate care facility (ICF).² Recently, medical care of this population has been scrutinized, and at least one authority has recommended that physicians who practice in nursing homes place greater emphasis on health promotion activities.³ Although some disease prevention activities, such as influenza immunization, can be more successful in nursing home residents⁴ than in the com-

munity-dwelling elderly population, most health promotion activities are apparently neglected in nursing home patients. The reasons for this neglect are unknown. One explanation could be that physicians believe most nursing home patients' life expectancies are too short to benefit from health promotion activities; however, about two-thirds of nursing home patients have lived in their facilities for longer than 1 year, and 20 percent have been nursing home residents for more than 5 years.² Other reasons physicians do not pursue health promotion might be because physicians are not reimbursed for preventive care, do not agree with current recommendations of expert panels, or are confused by the lack of uniformity among various recommendations.⁵ Although health promotion recommendations for adults⁵⁻¹² and the elderly¹³⁻¹⁵ have been published during the last decade, health promotion for patients in long-term care facilities has received less attention.^{3,15-17}

Health promotion activities are appropriate for at least some nursing home residents.^{3,15-17} This review summarizes current knowledge and recommendations regarding health promotion practices for nursing home patients. Recommendations are also suggested for improving health promotion in nursing home patients.

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Methods

Using the key words "health promotion" and "preventive health services," cross-referenced with "aged," articles were selected from MEDLINE files from 1979 to the present. Bibliographies of articles were reviewed to select additional references. Articles were selected if health promotion practices were reviewed that were applicable to those aged 65 years and older.

Epidemiology

Only 5 percent of those older than 65 years reside in nursing homes, although the lifetime risk of nursing home placement has been estimated at 25 to 40 percent¹⁸ and could be even greater in the future.¹⁹ Ninety percent of nursing home residents are older than 65 years, and approximately 70 percent are women.¹ Today most nursing home residents are admitted from the hospital²⁰; 20 years ago most were admitted directly from home.²¹ Chronic conditions, such as arthritis and heart and lung disease, are common, and most residents suffer from more than one such disease. Almost one-half of nursing home residents have some dementia, often in combination with another mental disorder.¹ Most have mental or physical disabilities and need help with activities of daily living (ADLs), such as bathing, feeding, or ambulation.²⁰ More than one-half require assistance with four or more ADLs; only 11 percent have no limitations in ADLs.²

Nursing home residents can be divided into short-stay residents (those who stay fewer than 6 months) and long-stay residents (those who remain longer than 6 months).²² Short-stay residents usually are younger than other patients and most often are admitted to a nursing home for rehabilitation, prolonged convalescence, or terminal care. Long-stay residents, estimated to represent about 90 percent of the patients in a nursing home at any one time, often suffer from dementia or another mental disorder, and probably will need care in a long-term care facility for the remainder of their lives. A recent study of 1942 patients admitted to a nursing home for the first time in 1982-1983 supports this view of the nursing home population. Lewis, et al.²³ found that 36 percent of patients admitted to a nursing home for the first time died in the nursing home or in the hospital after transfer there; the remaining 64 percent who were discharged had a median

survival time of almost 2 years. Forty-seven percent of the entire group were alive 2 years later.

Goals of Nursing Home Care

Kane, et al.¹⁷ have proposed seven goals of nursing home care. These goals can help physicians organize the care they provide (Table 1). Appropriate health promotion for nursing home patients helps to achieve three of their goals: (1) maintaining functional independence, (2) maximizing quality of life, and (3) preventing acute and iatrogenic medical illness.

Annual Examinations and Laboratory Tests

Most studies of health promotion in nursing home patients have examined the ability of annual examinations and laboratory tests to screen for disease (Table 2).²⁴⁻²⁸ The value of periodic physical examinations in nursing home patients has been examined in both a Veterans Administration nursing home unit²⁴ and in a study of seven community nursing homes.²⁵ Both studies found little evidence that annual examinations discovered important new physical findings or contributed significantly to patient care.^{24,25}

Screening laboratory tests are obtained commonly in a variety of health care settings, although their usefulness is debated.^{3,29} Screening is not helpful for many diseases. Screening asymptomatic persons for disease is worthwhile only when intervention results in reduced morbidity or lowered mortality compared with treatment after symptoms have appeared. Ideally the prevalence of the disease should justify the cost of screening, have a marked effect on quality of life, and have an acceptable treatment.²⁹

Table 1. Goals of Nursing Home Care.*

Provide a safe and supportive environment for chronically ill and dependent people
Restore and maintain the highest possible level of functional independence
Preserve individual autonomy
Maximize quality of life, perceived well-being, and life satisfaction
Provide comfort and dignity for terminally ill patients and their loved ones
Stabilize and delay progression, whenever possible, of chronic medical conditions
Prevent acute medical and iatrogenic illnesses and identify and treat them rapidly when they do occur

*Reprinted, with permission, from Kane RL, Ouslander JG, Abrass IB. *Essentials of clinical geriatrics*. 2nd ed. New York: McGraw-Hill, 1989:426.

Table 2. Previous Studies of Screening in Nursing Homes.

Author	Population	Study Description	Outcome
Gambert, et al. 1982 ²⁴	96 Veterans Administration nursing home patients	Retrospective review of consecutive annual examinations, chest radiographs, and laboratory work-up indicated by examination	Only 3 new physical findings and 5 new electrocardiogram (ECG) findings, none clinically significant
Irvine, et al. 1984 ²⁵	732 annual examinations in 417 nursing home patients in 7 homes	Retrospective; examinations performed by physicians other than patients' primary care physicians	51% of examinations had new findings; only 3.4% were judged significant by primary care physician
Domoto, et al. 1985 ²⁶	70 high-functioning patients in a chronic care facility	Retrospective review of admission and yearly laboratory findings, including routine blood tests, urinalysis, stool guaiac, chest radiographs, ECGs	20% of admission results were abnormal; only 0.2% changed therapy. 17% of yearly results were abnormal; only 0.1% changed therapy
Wolf-Klein, et al. 1985 ²⁷	446 nursing home patients and 54 day-care patients	Retrospective review of annual tests, including complete blood count, chemistry panel, thyroid function tests, chest radiographs, ECGs	1.56 abnormalities per patient per year; of 15,000 tests, 756 were abnormal. 66 actions were taken by physicians; 21 diagnoses with 12 treatments and 7 cures (all urinary tract infections)
Levinstein, et al. 1987 ²⁸	121 nursing home patients with at least one annual screening	Retrospective; tests included complete blood count, electrolytes, thyroid function tests, urinalysis, rapid plasma reagin, chest radiographs, ECGs	Of 9270 test results, 0.88% led to some benefit

Three recent studies have attempted to determine the utility of obtaining screening laboratory tests in nursing home populations (Table 2).²⁶⁻²⁸ Although abnormal laboratory results were often found, both admission and annual tests appeared to have little influence on patient care.^{26,27} Levinstein, et al.²⁸ concluded that some screening tests benefited their patients, but only 82 of 9270 (0.88 percent) total tests led to at least a minor benefit, and the cost-effectiveness of such testing has been questioned.³⁰ In the study by Levinstein, et al., serum electrolytes, creatinine, thyroxine (T₄), glucose, blood urea nitrogen (BUN), complete blood count (CBC), and urinalysis accounted for all beneficial tests.

In summary, studies of routine examinations and laboratory testing have found little support for these practices, at least in the closely followed patients studied. In the usual nursing home patient, cared for by physicians and in institutions without the resources available to academic practices, routine examinations and testing may be of more benefit, but studies are not available to support these practices. Also, routine testing would be expected to alter patient care rarely because

most nursing home patients frequently undergo some or all of the tests Levinstein, et al. found most useful, either for diagnostic reasons or for therapeutic monitoring. In these patients, ordering additional laboratory tests for screening should be expected to add little to the quality of patient care.

Physicians should not confuse screening laboratory testing with testing necessary to monitor chronic conditions (e.g., periodic testing of electrolytes, BUN, and creatinine in patients on diuretics). Monitoring chronic conditions is as necessary in nursing home patients as it is in ambulatory patients.^{3,15}

Current Recommendations for Geriatric Patients

Health promotion practices for persons aged 65 years and older have been published recently,^{5-15,31,32} as have recommendations for nursing home patients^{3,15-17,33} (Table 3). Marked variation exists between the recommendations of authorities regarding some of these practices.¹² For example, blood pressure measurement is recommended as frequently as monthly in nursing

Table 3. Recommendations for Health Promotion Practices in Persons 65 Years and Older.*

Health Promotion Practice/Condition	Recommendations for Persons Aged 65 Years and Older
Vital signs	Monthly — Kane, et al. ¹⁷ Blood pressure only: Monthly — Magenheim ¹⁶ Yearly — Gallo, et al. ¹⁵ Every 2 years — Frame, ⁹ USPSTF ⁵ Every office visit — CTF ⁶
Breast cancer examination	Yearly — Magenheim, ¹⁶ ACS, ¹⁰ USPSTF, ⁵ CTF, ⁷ Frame, ⁹ Gallo, et al. ¹⁵
Mammography	Yearly — ACS, ¹⁰ Frame, ⁹ CTF, ⁷ Gallo, et al. ¹⁵ Every 1 to 2 years until age 75 years (unless pathologic conditions are found) — USPSTF ⁵ Every 2 to 3 years — Magenheim ¹⁶ "May be clinically prudent" — USPSTF ⁵ Every 3 years — Gallo, et al. ¹⁵ Every 4 years to age 70 — Frame ⁹ Every 5 years — NCEP ³¹
Cholesterol	
Colorectal cancer	
Rectal examination	Yearly — ACS ¹⁰
Stool for occult blood	Yearly — Kane, et al., ¹⁷ Magenheim, ¹⁶ ACS, ¹⁰ Frame, ⁹ Gallo, et al. ¹⁵ Yearly in high-risk patients only (patients with first-degree relatives with colorectal cancer, a personal history of endometrial cancer, breast cancer, inflammatory bowel disease, or with polyps on sigmoidoscopy) — USPSTF ⁵ ; yearly in patients with first-degree relative with colorectal cancer — CTF ⁸
Drug review for poly-pharmacy	3 or 4 times a year — Magenheim ¹⁶
Dental examination	Every 6 to 12 months — Gallo, et al. ¹⁵ Yearly — Kane, et al., ¹⁷ Magenheim ¹⁶ Yearly to age 75 years — CTF ⁶ "Regularly" — USPSTF ⁵
Depression	Yearly — Kane, et al., ¹⁷ Magenheim ¹⁶
Falls	Yearly and after each fall — Magenheim ¹⁶
Foot examination	Yearly — Kane, et al. ¹⁷ Every 2 years to age 75 years, then yearly — Magenheim ¹⁶
Functional status	Yearly by nursing staff — Kane, et al. ¹⁷ (including gait and mental status testing); with changes in medicine — Magenheim ¹⁶
Hearing screening	Yearly — Kane, et al. ¹⁷ "Clinical discretion" — USPSTF ⁵ Every 2 years — Gallo, et al., ¹⁵ Magenheim ¹⁶ (including check of ear canals and portable audiometry)
Height	"Clinical discretion" — USPSTF ⁵ Every 2 years — Gallo, et al. ¹⁵ Every 4 years (to assess weight) — Frame ⁹
Immunizations	
Tetanus-diphtheria (Td)	Every 10 years — Kane, et al., ¹⁷ Magenheim, ¹⁶ USPSTF, ⁵ CTF, ⁶ ACP, ³² Frame ⁹
Influenza	Yearly — Kane, et al., ¹⁷ Magenheim, ¹⁶ USPSTF, ⁵ CTF, ⁶ ACP, ³² Gallo, et al. ¹⁵
Pneumococcal	Once — Kane, et al., ¹⁷ Magenheim ¹⁶ Every 6 years in high-risk patients (see text) — USPSTF, ⁵ ACP ³²

Table 3. Continued

Health Promotion Practice/Condition	Recommendations for Persons Aged 65 Years and Older
Ophthalmologic conditions	
Visual acuity	Yearly — Kane, et al. ¹⁷ "May be appropriate" — USPSTF ⁵ Every 2 to 3 years (ophthalmologic examination) — Magenheim ¹⁶ Every 2 years — Gallo, et al. ¹⁵ "At clinical discretion" by eye specialist — USPSTF ⁵
Glaucoma screening	Yearly (tonometry) — Kane, et al. ¹⁷ Every 5 years (tonometry) — Gallo, et al. ¹⁵ Yearly — Magenheim, ¹⁶ ACS ¹⁰ Every 3 years — Gallo, et al. ¹⁵ Yearly — Magenheim ¹⁶ (may omit if 2 negative smears within last 5 years) Yearly — ACS ¹¹ (may perform less frequently at physician's discretion after 3 consecutive normal examinations) Every 2 years to age 70 years — Frame ⁹ (after 2 negative smears 1 year apart) Every 1-3 years unless history of consistently negative smear — USPSTF ⁵ Every 5 years — CTF ⁶
Pelvic examination	On admission to nursing home and yearly — Kane, et al., ¹⁷ Magenheim ¹⁶ High-risk patients only (e.g., nursing home residents) — USPSTF ⁵ On admission to nursing home and after any exposure — CDC ³³
Papanicolaou smear (cervical cytology)	Yearly — USPSTF ⁵ (for patients with personal or family history of skin cancer, increased exposure to sunlight, or evidence of benign precursors) Self-examination by patient — Frame ⁹ Yearly thyroid function testing (TFTs), including TSH — Kane, et al. ¹⁷ Yearly examination, TFTs discretionary — Magenheim ¹⁶ Every 2 years — TFTs (including TSH) Gallo, et al. ¹⁵ "May be clinically prudent" (women only) — USPSTF ⁵
Tuberculin skin test (PPD—two-step)	Monthly — Kane, et al. ¹⁷ Yearly — Magenheim ¹⁶ "At clinical discretion" — USPSTF ⁵ Every 4 years — Frame ⁹
Skin examination for cancer	Yearly visits for health promotion, with counseling for diet, exercise, substance abuse, injury prevention; dipstick urinalysis at discretion of examiner — USPSTF ⁵ Ongoing evaluation of facility for safety — Magenheim ¹⁶ Ongoing infection control program — Magenheim, ¹⁶ Kane, et al. ¹⁷ Headache evaluation 3 or 4 times a year at medication review for temporal arteritis and impending cerebrovascular accident — Magenheim ¹⁶ Yearly history for incontinence — Magenheim ¹⁶
Thyroid disease	
Weight	
Miscellaneous recommendations	

*Recommendations of Kane, et al.,¹⁷ Magenheim,¹⁶ and Gallo, et al.¹⁵ apply to residents of nursing homes (older than 65 years of age) only. These recommendations are summaries only. Original references should be consulted for further detail and possible exceptions. If no recommendation is listed, the absent group(s) either did not consider the practice or recommended against it. USPSTF = United States Preventive Services Task Force, CTF = Canadian Task Force, ACS = American Cancer Society, NCEP = National Cholesterol Education Program.

Table 4. Recommendations for Health Promotion in Nursing Home Patients.

Health Promotion Practice	Comments
<i>On admission</i>	
History and physical examination, especially of breasts, ears, feet, rectum; immunization status; review diagnoses and medicines	A directed examination to focus on common diagnoses in the elderly
Geriatric assessment, to include: mental status testing, assessment of affect, hearing and vision screen, fall evaluation, advance directives	Case finding for common problems of nursing home patients
Laboratory determinations and procedures: PPD testing, complete blood count and serum chemistry profile to include blood urea nitrogen (BUN), creatinine, albumin, thyroxine (T ₄), thyroid stimulating hormone (TSH)	Often baseline laboratory data are not included in transfer summaries
<i>From admission onward</i>	
Review vital signs monthly	To detect hypertension, onset of acute illness
Review all drugs at least every 6 months	Polypharmacy is common in nursing home patients
Administer influenza vaccine yearly and pneumococcal vaccine at least once	Safety and efficacy of influenza vaccine well established in nursing homes
<i>After 1 year in the nursing home (for appropriate patients)</i>	
Yearly examinations: breast, rectal, feet, ear canals, thyroid, skin, weight	Common sites of cancer or other disease in the elderly
Yearly evaluations: hearing screen; ophthalmology examination for refraction, glaucoma; dental examination; advance directives	
Yearly laboratory tests: stool for occult blood; Papanicolaou smear; mammography; thyroid function tests, including T ₄ , TSH	Papanicolaou smear may be omitted if patient has had three consecutive annual negative examinations, or a history of negative examinations before age 65 years

home patients¹⁷ to every 2 years for all adults.⁹ Recommendations for screening for colorectal cancer vary from yearly rectal examinations and stool tests for occult blood for all¹⁰ to screening patients at high risk only.⁵ Cervical smears to detect cervical cancer have been recommended yearly¹¹ to every 5 years.⁶ Space considerations do not allow a complete discussion of the data and reasoning that support these recommendations. Readers are referred to the cited reports for more detailed discussions.

Unfortunately, no randomized studies are available to support definitive recommendations for health promotion practices in nursing home patients. My recommendations are found in Table 4. These recommendations are the minimal screening practices recommended for appropriate patients (see below). A wider variety of screening tests might be appropriate for those patients who desire them (e.g., serum cholesterol). The following discussion highlights reasons for my recommendations.

Recommendations for Nursing Home Patients

It is important to emphasize that not all nursing home patients should be offered health promotion. Patients who are terminal or who do not desire intervention if disease is found are examples of those who should not be offered screening

procedures. Most screening examinations are not appropriate for patients in persistent vegetative states, because finding abnormal results would not alter their care or improve the quality of their lives. Nevertheless, practices that can affect the health of other residents of the nursing home, such as skin testing for tuberculosis and influenza vaccination, should be required for all patients. Some have argued that demented patients should be screened for conditions that are likely to be painful (e.g., cancer).³⁴

The question of whether to offer health promotion for some other nursing home patients may be difficult to answer. For example, an 80-year-old woman who is wheelchair-bound because of a stroke might not wish to have a mastectomy and chemotherapy for newly diagnosed breast cancer, but she might consent to a lumpectomy. The nursing home physician should help patients with decision-making capacity decide which health promotion practices are appropriate, much as physicians ask for preferences regarding other kinds of care. Physicians should consult with surrogates of patients who do not have decision-making capacity regarding the appropriateness of health promotion activities for these patients. Recommendations for health promotion must be individualized.¹⁵

Because many patients are admitted to the nursing home for only brief stays, health promotion activities can be organized by the patient's expected length of stay. Some activities are appropriate on admission, whereas others need not be addressed until the patient has lived in the nursing home for some time (arbitrarily chosen as 1 year in this review, as many health promotion activities are performed annually). In this way physicians do not expend resources for health promotion on patients for whom it would be inappropriate. Examples of such patients include those who are expected to live less than 1 year or patients admitted for a short stay whose care will be assumed by another physician upon discharge. Health promotion activities for short-stay patients should be undertaken only after consultation with the patient's regular physician to avoid duplicated studies and efforts.

Admission Health Promotion Activities

When a new patient is admitted to the nursing home, a thorough history and a physical examination are important.^{3,35} These steps are necessary not only for health promotion, but also to ensure that the physician is aware of all of the patient's problems and his or her baseline physical condition. This knowledge is especially important in the nursing home, as information can be lost or is often unavailable in the transfer of patient from home or hospital.^{3,14,17} The history can be obtained from family and former health care providers, as well as from the patient. Although some parts of the standard history are not as important in caring for the elderly (e.g., family history), other information assumes greater importance. Allergic reactions, medication use and reactions, and immunization status are frequently overlooked. Medicines should be scrutinized, and attempts made to discontinue those that are no longer necessary (e.g., H₂ receptor antagonists).

Patients often arrive with long problem lists or lists of diagnoses. These diagnoses should be assessed and not accepted unquestioningly (e.g., "gout" in a patient with a normal serum uric acid who has never had urate crystals aspirated from a joint).³⁵

Most components of the routine adult physical examination have not been shown to be productive when screening for disease in asymptomatic

individuals.³⁶ A directed examination, focusing on problems common in the elderly, can be more helpful, although there are no studies validating this approach in nursing home patients. The following areas of physical examination are important for geriatric nursing home patients.

Breast examination by a physician remains important in the detection of breast cancer,⁵ the incidence and mortality of which increases with age. One-half of all breast cancers occur in women older than 65 years.³⁷ Treatment of breast cancer in older patients appears to be at least as successful as that in younger age groups.¹³

A digital rectal examination screens for colorectal cancer. Although an estimated 90 percent of cancers are beyond the examiner's reach,³⁸ this examination provides additional benefits. The physician can obtain a stool specimen for guaiac testing, and in men, screen for prostate cancer, although the sensitivity of this maneuver is poor.³⁹ A rectal examination also will detect fecal impaction. In my experience, fecal impaction is found often enough in new nursing home patients to justify rectal examination on admission.

Nursing home patients fall more frequently than do community-living elderly.⁴⁰ Although these falls are most often the result of many factors, foot problems can be contributory.⁴¹ The feet of ambulatory nursing home residents should be examined for calluses, ingrown or dystrophic nails, or other painful conditions.⁴² A podiatric referral for patients with diabetes or peripheral vascular disease will help ensure adequate foot hygiene and prevent ulcers.

A brief geriatric assessment, including mental status testing, screening for depression, hearing and vision testing, and a fall evaluation (see above), also should be done on admission for appropriate patients.³ The patient's mental status can be examined easily with a screening instrument, such as the Mini-Mental Status Exam⁴³ or the Short Portable Mental Status Questionnaire.⁴⁴ In many facilities a mental status examination is done by the nursing staff. Depression is present in 12 to 45 percent of hospitalized elderly persons.⁴⁵ Affect may be assessed clinically during the history and examination, or screening instruments, such as the Geriatric Depression Scale, can be used.⁴⁶ Likewise, hearing and vision screening can be performed during the admission examination. If physicians base their opinions

on the examination alone, without formal testing, then examiners should refer all patients with questionable results for further evaluation. Not all patients with hearing loss will want or will be able to wear a hearing aid. For patients with normal or nearly normal mental status, however, a hearing aid can greatly improve the quality of life.

Because falls are a common problem in nursing home patients, screening for falls can be done by using standard instruments,^{47,48} or fall risk can be assessed informally by watching a patient get up from a chair, walk, turn around, and return to the examiner.

As soon as possible after admission, physicians should consult with patients regarding the types of care they desire in the event they become unable to make decisions.^{49,50} Such advance directives are even more important for nursing home residents than for other geriatric patients because nursing home residents are at high risk for both cognitive and physical decline.

Careful assessment of patients' decision-making capacity is important when asking for advance directives. Guidelines are available to assist physicians with this task.^{49,50} Two points are worthy of emphasis: (1) demented patients may still be capable of expressing a preference regarding medical care, and (2) decision-making capacity is specific to the decision. For example, a patient with mild dementia might not understand the consequences of refusing amputation for a gangrenous limb but might be able to consent to withholding cardiopulmonary resuscitation. If the physician determines that the patient lacks decision-making capacity, then a guardian or other patient surrogate should be consulted, usually the patient's spouse or other family member.⁴⁹

Admission Laboratory Tests

Laboratory tests and procedures on admission should include a tuberculin skin test (PPD) for all residents. Two-step testing is preferred to detect the booster phenomenon.^{33,51,52} A study conducted by the Centers for Disease Control found the incidence of tuberculosis to be 1.8 times as high in nursing home residents as in community-dwelling elderly.³³ Tuberculosis has occurred in nursing homes in clusters from an index case.⁵² A baseline laboratory assessment, such as complete blood count and chemistry panel (including

albumin) can detect disease (e.g., mild renal insufficiency, malnutrition, and anemia) not reported by the patient or listed in the hospital discharge summary, although the evidence that such testing is effective is weak (Table 2). Unrecognized hypothyroidism, which has an incidence of 1 to 2 percent in women more than 65 years old, can be detected by thyroid function tests, especially serum thyroxine and thyroid-stimulating hormone.^{5,53} Unrecognized hypothyroidism was found in almost 1 percent of 571 residents of a skilled nursing facility in Wisconsin.⁵⁴

Ongoing Health Promotion Activities

After admission all patients should have vital signs reviewed monthly for evidence of intercurrent illness and hypertension.³ Drugs should be reviewed thoroughly at least twice each year.^{3,15,55} Every patient aged 65 years or older should be immunized with influenza vaccine every year, unless it is contraindicated (allergy to eggs or neomycin).³² Pneumococcal vaccine should be given at least once to every nonterminal patient 65 years old or older.⁵ High-risk patients, such as those with chronic obstructive pulmonary disease, asplenia, diabetes, congestive heart failure, liver disease, or kidney failure, can be revaccinated every 6 years. High-risk patients previously vaccinated with the 14-valent vaccine should be reimmunized with the 23-valent vaccine.³² Tetanus immunization has received little attention in nursing home patients but is recommended for all without an upper age limit.⁵⁶ Immunity to tetanus and diphtheria can be assured by completing primary immunization with tetanus-diphtheria toxoids and giving boosters at recommended intervals in all patients.^{32,56,57}

At yearly intervals in appropriate women patients, repeat examinations of the breasts should be done. Mammography should be done at least every other year. A Papanicolaou smear also should be obtained yearly. An annual Papanicolaou smear can be discontinued in patients more than 65 years old if the patient has had at least three annual negative examinations¹¹ or has a history of negative examinations before the age of 65 years.⁵ Digital rectal examination and examination of the feet and ear canals are also important. Thyroid status should be assessed clinically and with thyroid function tests, and the patient's

weight measured and compared with past weights. In patients who have a history of occupational or recreational sun exposure, the skin should be examined.⁵

Hearing can be assessed yearly by audiometry or by examination during history taking. A yearly ophthalmologic examination is important for detecting refractive errors and for glaucoma screening. If available, an annual dental examination can detect loose teeth and ill-fitting dentures, as well as screen for oral cancer.⁵⁸ A complete examination of the oral cavity should be done in patients who are at high risk for oral cancer, such as those who report a history of tobacco or alcohol use.⁵

Stool testing for blood (guaiac) should be done annually in appropriate patients. Although there is no definitive proof that this measure results in lower mortality from colorectal cancer, studies on this subject are in progress.^{38,59} Patients appear to live longer when their cancers are detected early, although lead-time bias is difficult to eliminate. Physicians should be aware that the positive predictive value of a stool guaiac test for cancer is at best about 10 percent; that is, at least 90 percent of persons testing positive for blood in the stool will not have cancer. In one study of 450 patients in a chronic-care hospital, 21 patients had positive guaiac tests; two of the patients with positive tests had colon tumors.⁶⁰ Thus, it is important to screen only those patients who wish (and can tolerate) further work-up, such as an air-contrast barium enema or colonoscopy.

Mammography remains a sensitive test for breast cancer in the elderly woman.⁵ A recent study of women nursing home residents who had resided in the facility for at least 1 year found that only 1 of 139 had had mammography.⁶¹ Patients who would wish treatment for breast cancer should have mammography at least every other year. The Clinical Practice Committee of the American Geriatrics Society has proposed that 85 years may be an acceptable upper age limit to stop mammography because the average nonpalpable breast carcinoma takes about 10 years to grow to a diameter of 1 cm.⁶²

Conclusion

Health care promotion of nursing home patients appears to be neglected by most physicians. In patients who have reasonable quality of life and

who would wish intervention in the event that a treatable condition is found, health screening should be offered on admission to the facility and at yearly intervals thereafter. The types of screening tests offered should be individualized. Further research is needed to discover the optimal techniques and frequency of screening for both community-dwelling elderly and residents of nursing homes and to improve physician compliance with health promotion recommendations.

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