UpToDate®
Official reprint from UpToDate®
www.uptodate.com © 2024 UpToDate, Inc. and/or its affiliates. All Rights Reserved.

Comprehensive geriatric assessment

AUTHORS: Katherine T Ward, MD, David B Reuben, MD
SECTION EDITOR: Kenneth E Schmader, MD
DEPUTY EDITOR: Jane Givens, MD, MSCE

All topics are updated as new evidence becomes available and our peer review process is complete.

Literature review current through: **Apr 2024.**
This topic last updated: **Jul 22, 2022.**

INTRODUCTION

Geriatric conditions such as functional impairment and dementia are common and frequently unrecognized or inadequately addressed in older adults. Identifying geriatric conditions by performing a geriatric assessment can help clinicians manage these conditions and prevent or delay their complications.

"Geriatric syndrome" is a term that is often used to refer to common health conditions in older adults that do not fit into distinct organ-based disease categories and often have multifactorial causes. The list includes conditions such as cognitive impairment, delirium, incontinence, malnutrition, falls, gait disorders, pressure ulcers, sleep disorders, sensory deficits, fatigue, and dizziness. These conditions are common in older adults, and they may have a major impact on quality of life and disability. Geriatric syndromes can best be identified by a geriatric assessment.

Although the geriatric assessment is a diagnostic process, the term is often used to include both evaluation and management. Geriatric assessment is sometimes used to refer to evaluation by the individual clinician (usually a primary care clinician or a geriatrician) and at other times is used to refer to a more intensive multidisciplinary program, also known as a comprehensive geriatric assessment (CGA).

This topic will review the indications for CGA, as well as its major components and evidence of its efficacy. General issues of geriatric health maintenance and the assessment of specific geriatric populations are discussed elsewhere. (See "Geriatric health maintenance" and "Office-

based assessment of the older adult" and "Comprehensive geriatric assessment for patients with cancer".)

BACKGROUND

Comprehensive geriatric assessment (CGA) is defined as a multidisciplinary diagnostic and treatment process that identifies medical, psychosocial, and functional limitations of a frail older person in order to develop a coordinated plan to maximize overall health with aging [1,2]. The health care of an older adult extends beyond the traditional medical management of illness. It requires evaluation of multiple issues, including physical, cognitive, affective, social, financial, environmental, and spiritual components that influence an older adult's health. CGA is based on the premise that a systematic evaluation of frail, older persons by a team of health professionals may identify a variety of treatable health problems and lead to better health outcomes.

CGA programs are usually initiated through a referral by the primary care clinician or by a clinician caring for a patient in the hospital setting. The content of the assessment varies depending on different settings of care (eg, home, clinic, hospital, nursing home). CGA is not available in all settings, due to issues related to the time required for evaluation, need for coordination of multidisciplinary specialties, and lack of access to some disciplines (eg, outpatient social work, pharmacy, and nutrition) in some practices.

INDICATIONS FOR REFERRAL

The best evidence for comprehensive geriatric assessment (CGA) is based on identifying appropriate patients (ie, excluding patients who are either too well or are too sick to derive benefit). No criteria have been validated to readily identify patients who are likely to benefit from CGA. Specific criteria used by CGA programs to identify patients include:

- Age
- Medical comorbidities such as heart failure or cancer
- Psychosocial disorders such as depression or isolation
- Specific geriatric conditions such as dementia, falls, or functional disability
- Previous or predicted high health care utilization
- Consideration of change in living situation (eg, from independent living to assisted living, nursing home, or in-home caregivers)

One outpatient approach would be to refer patients for CGA who are found to have problems in multiple areas during geriatric assessment screens (see "Office-based assessment of the older adult"). Major illnesses (eg, those requiring hospitalization or increased home resources to manage medical and functional needs) should also prompt referral for CGA, particularly for functional status, fall risk, cognitive problems, and mood disorders. (See "Geriatric health maintenance" and 'Major components' below.)

An inpatient approach would be to refer older patients admitted for a specific medical or surgical reason (eg, fractures, failure to thrive, recurrent pneumonia, pressure sores). Another approach would be to have all patients above a certain age (eg, 85 years) or above a threshold on instruments predicting hospital readmission [3] receive preliminary screening to determine whether a full multidisciplinary evaluation is needed.

Most outpatient CGA programs exclude patients who are unlikely to benefit because of terminal illness, severe dementia, complete functional dependence, or inevitable nursing home placement. However, some of these patients (eg, those with severe dementia) may benefit by increasing the capabilities of caregivers when the assessment is accompanied by ongoing care management [4]. Exclusionary criteria have also included identifying older persons who are "too healthy" to benefit, such as those who are completely functional without any medical comorbidities.

ASSESSMENT TEAM

The range of health care professionals working in the assessment team varies based on the services provided by individual comprehensive geriatric assessment (CGA) programs. In many settings, the CGA process relies on a core team consisting of a clinician, nurse, and social worker and, when appropriate, draws upon an extended team of physical and occupational therapists, dietitians, pharmacists, psychiatrists, psychologists, dentists, audiologists, podiatrists, and opticians. Although these professionals are usually on-staff in the hospital setting and are also available in the community, access to and reimbursement for these services have limited the availability of CGA programs. Increasingly, CGA programs are moving towards a "virtual team" concept in which members are included as needed, assessments are conducted at different locations on different days, and team communication is completed via telephone or electronically, often through the electronic health record.

Traditionally, the various components of the evaluation are completed by different members of the team, with considerable variability in the assessments. The medical assessment of older persons may be conducted by a physician (usually a geriatrician), nurse practitioner, or

physician assistant. The core team (geriatrician, nurse, social worker) may conduct only brief initial assessments or screens for some dimensions. These may be subsequently augmented with more in-depth evaluations by additional professionals. As an example, a dietitian may be needed to assess dietary intake and provide recommendations on optimizing nutrition, or an audiologist may need to conduct a more extensive assessment of hearing loss and evaluate an older person for a hearing aid.

CONDUCTING THE ASSESSMENT

Framework — Conceptually, comprehensive geriatric assessment (CGA) involves several processes of care that are shared over several providers in the assessment team. The overall care rendered by CGA teams providing longitudinal assessment and care can be divided into six steps:

- Data-gathering
- Discussion among the team, increasingly including the patient and/or caregiver as a member of the team
- Development, with the patient and/or caregiver, of a treatment plan
- Implementation of the treatment plan
- Monitoring response to the treatment plan
- Revising the treatment plan

Each of these steps is essential if the process is to be successful at achieving maximal health and functional benefits. However, monitoring response and revising the treatment plan may be left to primary care providers if the model relies on a single consultation.

Several different models for CGA have been implemented in various health care settings. Some CGA programs rely on post-discharge assessment due to the pressure to decrease lengths of hospital stay and reduce readmissions. Furthermore, while most of the early CGA programs focused on restorative or rehabilitative goals (tertiary prevention), many newer programs are aimed at primary and secondary prevention. (See "Geriatric health maintenance", section on 'Overview of prevention for older adults'.)

Assessment tools — Although the amount of potentially important information may seem overwhelming, formal assessment tools and shortcuts can reduce this burden on the clinician performing the initial CGA [5]. A pre-visit questionnaire sent to the patient or caregiver prior to the initial assessment can be a timesaving method to gather a large amount of information

(table 1) [6]. These questionnaires can also be completed through secure portals of electronic health records.

These questionnaires can be used to gather information about general history (eg, past medical history, medications, social history, review of systems), as well as gather information specific to CGA, such as:

- Ability to perform functional tasks and need for assistance
- Fall history
- Urinary and/or fecal incontinence
- Pain
- Sources of social support, particularly family or friends
- Depressive symptoms
- Vision or hearing difficulties
- Whether the patient has completed a durable power of attorney for health care or Physician Orders for Life-Sustaining Treatment (POLST)

Office staff can be trained to administer screening instruments to both save time and help the clinician to hone in on specific disabilities that need more detailed evaluation (table 1) [7].

MAJOR COMPONENTS

Core components of comprehensive geriatric assessment (CGA) that should be evaluated during the assessment process are as follows:

- Functional capacity
- Fall risk
- Cognition
- Mood
- Polypharmacy
- Social support
- Financial concerns
- Goals of care
- Advance care preferences

Additional components may also include evaluation of the following:

- Nutrition/weight change
- Urinary continence

- Sexual function
- Vision/hearing
- Dentition
- Living situation
- Spirituality

This section will focus on the core components of CGA. Although other aspects of the geriatric assessment are usually addressed during the CGA (eg, vision/hearing, nutrition), these components are discussed separately. (See "Geriatric health maintenance".)

Functional status — Functional status refers to the ability to perform activities necessary or desirable in daily life. Functional status is directly influenced by health conditions, particularly in the context of an elder's environment and social support network. Changes in functional status (eg, not being able to bathe independently) should prompt further diagnostic evaluation and intervention. Measurement of functional status can be valuable in monitoring response to treatment and can provide prognostic information that assists in long-term care planning.

Activities of daily living — An older adult's functional status can be assessed at three levels: basic activities of daily living (BADLs), instrumental or intermediate activities of daily living (IADLs), and advanced activities of daily living (AADLs).

BADLs refer to self-care tasks which include:

- Bathing
- Dressing
- Toileting
- Maintaining continence
- Grooming
- Feeding
- Transferring

IADLs refer to the ability to maintain an independent household which include:

- Shopping for groceries
- Driving or using public transportation
- Using the telephone
- Performing housework
- Doing home repair
- Preparing meals
- Doing laundry

- Taking medications
- Handling finances

Other possible IADLs that reflect the increased reliance on technology, which have not been validated, include:

- Ability to use a cellphone or smartphone
- Ability to use the internet
- Ability to keep a schedule of activities

AADLs vary considerably from individual to individual. These advanced activities include the ability to fulfill societal, community, and family roles as well as participate in recreational or occupational tasks.

Scales that measure functional status at each of these levels have been developed and validated. The Vulnerable Elders Scale-13 (VES-13) is a 13-item screening tool that is based upon age, self-rated health, and the ability to perform functional and physical activities [8-10]. It identifies populations of community-dwelling elders at increased risk for functional decline or death over a five-year period (table 2). The VES-13 can be self-administered or administered by nonmedical personnel over the telephone or at an office visit in less than five minutes. Because of its brevity, the Clinical Frailty Scale is also used in clinical practice (figure 1) [11].

Questions that ask about specific BADL and IADL functions have also been incorporated into a variety of more generic, health-related quality-of-life instruments (eg, the Medical Outcomes Study Short-form and its shorter version, the SF-12; the PROMIS family of instruments) [9,12-14]. Two commonly used indices are the Katz index for ADLs (table 3) and the Lawton scale for IADLs (table 4). Some AADLs (eg, exercise and leisure time physical activity) can be ascertained by using standardized instruments. However, given the broad nature of AADLs, open-ended questions asking how one's day is spent might provide a better assessment of function in healthier older persons.

Adults over age 70 are more likely to have motor vehicle accidents as well as increased associated mortality. The patient's ability and safety to drive a car should also be evaluated in the functional assessment. (See "Approach to the evaluation of older drivers".)

Gait speed — In addition to measures of ADLs, gait speed alone predicts functional decline and early mortality in older adults [15]. Assessing gait speed in clinical practice may identify patients who need further evaluation, such as those at increased risk of falls. Additionally, assessing gait speed may help identify frail patients who might not benefit from treatment of chronic asymptomatic diseases such as hypertension. For example, elevated blood pressure in

individuals age 65 and older was associated with increased mortality only in individuals with a walking speed ≥0.8 meters/second (measured over 6 meters or 20 feet) [16].

Falls/imbalance — Approximately one-third of community-dwelling persons age 65 years and one-half of those over 80 years of age fall each year. Patients who have fallen or have a gait or balance problem are at higher risk of having a subsequent fall and losing independence. An assessment of fall risk should be integrated into the history and physical examination of all geriatric patients (algorithm 1). (See "Falls in older persons: Risk factors and patient evaluation", section on 'Falls risk assessment' and "Approach to abnormal gait in adults".)

Cognition — The incidence of dementia increases with age, particularly among those over 85 years, yet many patients with cognitive impairment remain undiagnosed. The value of making an early diagnosis includes the possibility of uncovering treatable conditions and initiating advance care planning while the person still has capacity to participate in the process. The evaluation of cognitive function can include a thorough history and brief cognition screens [17]. If these raise suspicion for cognitive impairment, additional evaluation is indicated, which may include collateral information-gathering, detailed mental status examination, tests to evaluate medical conditions that may contribute to cognitive impairment (eg, B12, thyroid-stimulating hormone [TSH]), depression assessment, and/or radiographic imaging (computed tomography [CT] or magnetic resonance imaging [MRI]). Further evaluation in some persons includes neuropsychologic testing. (See "Evaluation of cognitive impairment and dementia".)

Mood disorders — Depressive illness in the elder population is a serious health concern leading to unnecessary suffering, impaired functional status, increased mortality, and excessive use of health care resources. (See "Diagnosis and management of late-life unipolar depression".)

Late-life depression remains underdiagnosed and inadequately treated. Depression in elder adults may present atypically and may be difficult to assess in patients with cognitive impairment. A two-question screener is easily administered and likely to identify patients at risk if both questions are answered affirmatively [18]. The questions are:

- "During the past month, have you been bothered by feeling down, depressed, or hopeless?"
- "During the past month, have you been bothered by little interest or pleasure in doing things?"

This two-question screen is sensitive but not specific (table 5). Thus, a positive screen should be supplemented with seven additional questions to complete the Patient Health Questionnaire-9 (PHQ-9) [19,20]. The PHQ-9 has increasingly been used to detect and monitor

depression symptoms among elder adults (table 6) [21]. The PHQ-9 provides a reliable and valid measure of depression severity.

A variety of other screens for depression are available and each has its advantages and disadvantages [22].

Polypharmacy — Older persons are often prescribed multiple medications by different health care providers, putting them at increased risk for drug-drug interactions and adverse drug events. The clinician should review the patient's medications at each visit. The best method of detecting potential problems with polypharmacy is to have patients bring in all of their medications (prescription and nonprescription) in their bottles. Discrepancies between what is documented in the medical record and what the patient is actually taking must be reconciled. As health systems have moved towards electronic health records and e-prescribing, the potential to detect potential medication errors and interactions has increased substantially. Although this can improve safety, record-generated messages about unimportant or rare interactions may lead to "reminder fatigue." (See "Drug prescribing for older adults" and "Deprescribing".)

Elder patients should also be asked about alternative medical therapy. As an example, herb use can be assessed by questioning: "What prescription medications, over the counter medicines, vitamins, herbs, or supplements do you use?" (See "Overview of herbal medicine and dietary supplements".)

Social and financial support — The existence of a strong social support network in an older adult's life can frequently be the determining factor of whether the patient can remain at home or needs placement in an institution. A brief screen of social support includes taking a social history and determining who would be available to the older adult to help if they became ill. Early identification of problems with social support can help planning and timely development of resource referrals. For patients with functional impairment, the clinician should ascertain who the person has available to help with activities of daily living. (See 'Activities of daily living' above.)

Caregivers should be screened periodically for symptoms of depression or caregiver burnout and, if present, referred for additional caregiving services, counseling, or support groups. Elder mistreatment should be considered in any geriatric assessment, particularly if the patient presents with contusions, burns, bite marks, genital or rectal trauma, pressure ulcers, or malnutrition with no clinical explanation. (See "Elder abuse, self-neglect, and related phenomena".)

The financial situation of a functionally impaired older adult is important to assess. Older adults may qualify for state or local benefits (eg, In-Home Supportive Services), depending upon their income. Older patients occasionally have other benefits such as long-term care insurance or veteran's benefits that can help in paying for caregivers or prevent the need for institutionalization.

Goals of care — Most older adult patients who are appropriate for CGA have limited potential to return to fully healthy and independent lives. Hence, choices must be made about what outcomes are most important for them and their families. Goals of care often differ from advance care preferences that focus on future states of health that would be acceptable, determination of surrogates to make decisions, and medical treatments. Generally, advance directives are framed in the context of future deterioration in health status. (See 'Advance care preferences' below.)

By contrast, a patient's goals of care are often positive (eg, regaining a previous health status, attending a future family event). Frequently, social (eg, living at home, maintaining social activities) and functional (eg, completing ADLs without help) goals assume priority over health-related goals (eg, survival) [23]. They are also person-centric and individualized. For example, regaining independent ambulation after a hip fracture may be a goal for one patient whereas another might be content with use of a walker. Both short-term and longer-range goals should be considered and progress towards meeting these goals should be monitored, including reassessment if goals are not met within a specified time period [24]. Approaches that have been used in CGA include Goal Attainment Scaling [25,26] and priorities-aligned decision-making [27]. However, clinicians can establish and monitor patient goals more informally by determining these in the course of clinical care and asking about them during subsequent visits.

Advance care preferences — Clinicians should begin discussions with all patients about preferences for specific treatments while the patient still has the cognitive capacity to make these decisions. These discussions should include preparation for in-the-moment decision-making [28], which includes choosing an appropriate decision-maker (ie, appointing a durable power of attorney, also known as a health care proxy, to serve as a surrogate in the event of personal incapacity), clarifying and articulating patients' values over time, and thinking about factors other than the patient's stated preferences in surrogate decision-making. As an example, patients who want to extend their life as long as possible might be asked about what should be done if the patient's health status changes and doctors recommend against further treatment, or if it becomes too hard for loved ones to keep them at home. Advance directives

help guide therapy if a patient is unable to speak for him or herself and are vital to caring optimally for the geriatric population. (See "Ethical issues in palliative care".)

Tools have been developed to help providers elicit and document care preferences and promote shared end-of-life decision-making among seriously ill patients [6,7], including the Physician Orders for Life Sustaining Treatment (POLST) [29,30] and Prepare for Your Care [31].

EFFICACY

Most meta-analyses have found that comprehensive geriatric assessment (CGA) leads to improved detection and documentation of geriatric problems [1,32-36]. However, the ability of CGA to improve outcomes (eg, decreased hospitalization, nursing home admission, and mortality) depends on specific CGA models and the settings where they have been implemented.

Several meta-analyses of randomized trials have evaluated five models of CGA [1,32-36]:

- Home geriatric assessment
- Acute geriatric care units
- Post-hospital discharge
- Outpatient consultation
- Inpatient consultation

Home geriatric assessment and acute geriatric care units have been shown to be consistently beneficial for several health outcomes. By contrast, the data are conflicting for post-hospital discharge, outpatient geriatric consultation, and inpatient geriatric consultation services.

A meta-analysis of 21 studies published prior to April 2020 focused on models, both single and multiple assessments, delivered in community or home settings for community-dwelling, high-risk, frail older persons [37]. The authors concluded that for these persons, CGA had little or no benefit on mortality (risk ratio [RR] 0.88, 95% CI 0.76-1.02) or nursing home admissions (RR 0.93, 95% CI 0.76-1.14) but reduced the risk of unplanned hospital admissions over approximately one year (RR 0.83, 95% CI 0.70-0.99).

Home assessment — Home geriatric assessment programs focus primarily on preventive rather than rehabilitative services. Although home assessment programs vary, most programs include a visiting nurse trained in geriatric care, as well as a physical therapist, social worker, psychologist, and specialty referrals when appropriate. In addition to home visits, telephone follow-up is routinely performed. Patients assessed at home are usually followed for at least

one year. Although the number of frail older adults receiving home-based medical care is increasing, the majority of eligible homebound and home-limited older adults, particularly rural residents, have not received these services [38].

Multiple meta-analyses have found home assessments to be consistently effective in reducing functional decline as well as overall mortality [1,33-35]. As an example, a meta-analysis of 21 randomized trials found that multidimensional home visit programs were effective in reducing functional decline if a clinical examination was conducted (odds ratio [OR] 0.64, CI 0.48-0.87) and in reducing mortality in patients age ≤77 years old (OR 0.74, 95% CI 0.58-0.94) [35]. However, the home visits did not significantly prevent nursing home admissions (OR 0.86, CI 0.68-1.10). Like other meta-analyses for home assessments, this study was limited by heterogeneity across studies for all outcomes.

Acute geriatric care units — Several inpatient geriatric unit approaches have been developed in a variety of clinical settings. Within the US Department of Veterans Affairs Hospitals, these are usually referred to as Geriatric Evaluation and Management Units (GEMUs). In academic and private sector hospitals, they are usually labeled Acute Care of the Elderly (ACE) units. ACE units initially included structural modifications to promote mobility and simulate living conditions at home in preparation for a return to independence. More recently, however, ACE units are located on conventional hospital wards as designated geriatric units and tend to focus exclusively on processes of acute care rather than providing simulated living conditions and extended rehabilitation.

GEMUs are hospital wards that care for frail older patients through the multidisciplinary team approach. GEMUs have two main advantages over inpatient CGA consultation models. First, clinicians staffing the unit generally assume primary care of the patient, thus facilitating the implementation of recommendations. Second, the availability and experience of a dedicated team of providers (eg, nurses and therapists) increase the consistency and geriatric orientation of hospital care.

Numerous studies have compared the effect of inpatient CGA with usual care. A meta-analysis of 29 randomized trials involving nearly 14,000 participants found that patients who received CGA were more likely to be living at home (relative risk [RR] 1.06, 95% CI 1.01-1.10) and were less likely to be admitted to a nursing home up to a year after hospital admission (RR 0.80, 95% CI 0.72-0.89) [39]. There were no differences in dependence or cognitive status. CGA did not reduce the risk of death or the need for assistance with activities such as feeding or walking. This meta-analyses was limited by wide variability in interventions across studies. Moreover, due to length of stay (up to three months), such rehabilitative units are rarely available in the United States outside the Department of Veterans Affairs hospitals.

ACE units in acute care hospitals promote mobility and include processes to provide patient-centered care with nursing-initiated protocols. ACE units involve more intensive discharge planning and more detailed education to improve medication compliance, in comparison with usual hospital care. In clinical trials, care in ACE units was associated with greater independence in ADLs at discharge [40] and at one year [41], less frequent discharge to a nursing home, shorter and less expensive hospitalization [40,42], and reduced 30-day readmission rates [42], as well as higher satisfaction rates among patients, family members, clinicians, and nurses [43].

Due to the logistical barriers of having dedicated geriatric inpatient units (eg, unfilled beds when the census is light, overflow to other units when the unit is full), some programs have attempted to recreate the core elements of ACE units for hospitalized older persons who are not located on a single unit [44]. One matched cohort study indicated that benefits may include lower rates of adverse events, shorter hospital stays, and better satisfaction [45]. Whether these "virtual" units are as effective as ACE units is unknown; a 2011 meta-analysis suggests that they are not [46]. The lack of a consistent nursing staff that is trained in the care of older persons may diminish the effectiveness of this model. However, a pilot study of a virtual ACE on two medical-surgical acute care units with geriatric assessments completed by nursing staff showed improvements in getting patients up to the chair and reduced the prevalence of abnormal delirium screening scores [47].

Post-hospital discharge — Key elements of post-hospital discharge geriatric assessment include targeting criteria to identify vulnerable patients, a program of multidimensional assessment, comprehensive discharge planning, and home follow-up with nurses with specialized geriatrics training who visit the patients during the hospitalization and at least twice during the weeks following discharge. This intervention usually is initiated one to two days prior to hospital discharge. Similar to the home assessments discussed above, the post-discharge home visits are supplemented by telephone calls and additional visits by physical therapy, occupational therapy, social work, and/or home nursing services when indicated. (See 'Home assessment' above.)

Studies of CGA have found inconsistent benefit for post-hospital discharge programs [1,48-51]. As an example, in a randomized trial of post-hospitalization CGA conducted in the home versus usual care, there was no difference between treatment and control arms in reducing functional decline, readmission rates, or mortality after 60 days [48]. In another randomized trial of comprehensive discharge planning with home follow-up versus usual care, there was no difference in functional status, post-discharge acute care visits, depression, or patient satisfaction after 24 weeks [49]. However, those randomly assigned to the intervention were less likely to be readmitted to the hospital compared with the control group (20 versus 37

percent, respectively). The intervention was also associated with a reduction in cost. Subsequent studies of similar discharge management programs with in-home follow-up have also found a reduction in readmission rates, for up to 12 months in some studies [51]. A systematic review found that many of the components of CGA were parts of care transition interventions that were effective in reducing rehospitalizations and emergency department visits [52].

CGA programs for patients discharged to home from the emergency department were found to be effective at reducing emergency department visits and hospital admission [50]. However, a clinical trial did not show benefit for those who were frail or at high risk of frailty [53].

Outpatient consultation — Although meta-analyses have not shown benefit of outpatient CGA consultation [1,32], more complex CGA programs that address adherence to program recommendations and treat patients at higher risk of hospitalization have led to improved outcomes [54,55].

The first meta-analysis to evaluate CGA included four randomized trials and did not demonstrate benefit from outpatient CGA consultation in terms of hospital admission, nursing home placement, or physical/cognitive function [1]. However, one trial from this meta-analysis did not address whether recommendations from CGA were implemented and another trial included patients with poor prognoses, which may limit the generalizability of these data.

Some [54-57], but not all [58], of the subsequent randomized trials have shown some efficacy of outpatient CGA. Representative trials include:

- CGA coupled with an adherence intervention designed to empower the patient and prompt the primary care clinician to adhere to CGA recommendations was evaluated in a randomized trial [54]. Among community-dwelling older persons with functional disability, urinary incontinence, falls, or depressive symptoms, those randomly assigned to CGA with adherence intervention had less functional decline, less fatigue, and better social functioning over a 15-month period compared with the control group.

- In a randomized trial evaluating CGA followed by six months of interdisciplinary primary care versus usual primary care in a population at risk for high health care utilization, those randomly assigned to treatment had reduced functional decline, depression, and use of home health services compared with the control group over 15 to 18 months following randomization [55].

- However, in a large, cluster-randomized trial of multidimensional geriatric assessment followed by either geriatric team management or the primary care clinician alone, there

were no differences between the groups in hospitalization, admission to other institutions, and quality of life [58].

In a meta-analysis of nine randomized controlled trials (n = 3750) evaluating mortality, there was no benefit of outpatient CGA on survival (RR 0.95, 95% CI 0.82-1.12) [32]. Tests for heterogeneity showed consistency between trial data.

Specialized team management — Approaches to outpatient CGA have used some of the more successful components of older models and adapted them to programs within primary care practices:

- Geriatric Resources for Assessment and Care of Elders (GRACE) includes home-based CGA and long-term care management by a nurse practitioner and social worker who collaborate with the primary care clinician and a geriatrics interdisciplinary team. In a randomized trial of low-income older patients, those randomly assigned to the GRACE intervention had better health-related quality-of-life and fewer emergency department visits compared with those assigned to usual care [59]. Patients at high risk of hospitalization also had fewer admissions by the second year.

- Guided Care integrates an intensively trained nurse into primary care practices to provide geriatric assessment and chronic care management to high-risk patients. In a randomized trial of chronically ill older patients, those randomly assigned to Guided Care reported improved satisfaction rates and had less health care utilization with lower costs of care compared with those randomly assigned to usual care at eight months [60,61], but by 20 months of follow-up, the only significant reduction of health care was fewer episodes of home health care in the intervention group (OR 0.70, 95% CI 0.53-0.93). Among health maintenance organization (HMO) patients, the intervention also reduced the number of skilled nursing facility admissions (OR 0.53, CI 0.31-0.89) and days of hospitalization (OR 0.48, CI 0.28-0.84) [62].

- Practice redesign approaches (screening, structured visit notes, delegation to office staff, outreach to community resources) focus on specific geriatric conditions for assessment and management by clinicians or nurse practitioners. In two trials of patients in community-based practices, patients randomly assigned to practice-based interventions received better quality of care for falls and incontinence compared with those randomly assigned to usual care [56]. In a study within an academic geriatrics practice, this model of comanagement for five geriatric conditions resulted in improvements in quality of care for dementia, falls, and urinary incontinence when compared with a wait list control group; similar findings have been demonstrated in community-based practices [63,64].

Inpatient consultation — A meta-analysis of randomized trials of inpatient consultation found benefit for short-term (six- and eight-month) survival but no effect on functional status, readmission, or length of stay [65]. Two previous meta-analyses of inpatient consultation for CGA showed little benefit [1,66].

Many of the principles of inpatient CGA consultation have been incorporated into comanagement programs. As an example, comanagement with a geriatrician may reduce mortality, complications, delirium, and rehospitalization among patients with hip fracture on the surgical service [67-71]. A meta-analysis of surgical comanagement demonstrated decreased length of stay and suggested the possibility of decreased inpatient mortality [72]. In a second meta-analysis, CGA for persons with hip fracture provided as consultation or on an inpatient unit reduced the likelihood of being discharged to a setting where they would receive an increased level of care such as an assisted-living or long-term care facility compared with discharge home; although not significant, the meta-analysis suggested a benefit on inpatient mortality [70].

New applications of comprehensive geriatric assessment — Principles and processes of CGA are increasingly being applied to subspecialties [73] and subspecialty [74] conditions, including cancer patients undergoing chemotherapy [75,76] (two clinical trials showed reduced drug toxicity [77,78]); infective endocarditis [79]; considerations of surgery or transcatheter aortic valve replacement (TAVR) for patients with aortic stenosis [80]; vascular surgery [81]; and postoperative mortality risk [82]. In addition, CGA has been incorporated into new models of care such as Hospital at Home [83].

SUMMARY AND RECOMMENDATIONS

- Comprehensive geriatric assessment (CGA) is defined as a multidisciplinary diagnostic and treatment process that identifies medical, psychosocial, and functional capabilities of an older adult in order to develop a coordinated plan to maximize overall health with aging. CGA is based on the premise that a systematic evaluation of frail older persons by a team of health professionals may identify a variety of treatable health problems and lead to better health outcomes. (See 'Background' above.)

- No standard criteria are available to readily identify patients who are likely to benefit from CGA. Specific criteria used by CGA programs to identify patients include:

    - Age
    - Medical comorbidities (eg, hip fracture, transcatheter aortic valve replacement [TAVR])

    - Psychosocial problems
    - Specific geriatric conditions such as functional disability and frailty
    - Previous or predicted high health care utilization
    - Consideration of change in living situation (eg, from independent living to assisted living, nursing home, or in-home caregivers) (see 'Indications for referral' above)

- Community-dwelling older patients with functional disability, frailty, increased fall risk, cognitive decline, depression, or those at high risk for high health care utilization are appropriate candidates for CGA. Follow-up support is needed to ensure implementation of the findings of the CGA. (See 'Indications for referral' above.)

- Inpatients admitted with fractures, failure to thrive, recurrent pneumonia, and pressure sores may benefit from hospitalization on a geriatric unit that provides CGA. Patients age ≥85 years who have geriatric conditions such as dementia or immobility should also be considered for care on these units. (See 'Indications for referral' above.)

- The assessment team usually consists of a clinician, nurse, and social worker. Depending on the setting and patient's condition, the team may also include physical and occupational therapists, dietitians, pharmacists, psychiatrists, psychologists, dentists, audiologists, podiatrists, and opticians. (See 'Assessment team' above.)

- There are several components of CGA that should be evaluated, including (see 'Major components' above):

    - Functional capacity
    - Fall risk
    - Cognition
    - Mood
    - Polypharmacy
    - Nutrition/weight change
    - Urinary incontinence
    - Vision/hearing
    - Dentition
    - Living situation
    - Social support
    - Financial concerns
    - Goals of care
    - Spirituality
    - Advance care preferences

- Home geriatric assessment has been shown to be effective in improving functional status, preventing institutionalization, and reducing mortality. CGA performed in the hospital, especially in dedicated units, also has benefit on survival. Most programs of hospital discharge management with in-home follow-up have reduced readmission rates. However, studies of CGA have found inconsistent benefit for outpatient and inpatient geriatric consultation, except in the context of specific conditions (eg, hip fracture). (See 'Efficacy' above.)

Use of UpToDate is subject to the Terms of Use.

REFERENCES

1. Stuck AE, Siu AL, Wieland GD, et al. Comprehensive geriatric assessment: a meta-analysis of controlled trials. Lancet 1993; 342:1032.
2. Devons CA. Comprehensive geriatric assessment: making the most of the aging years. Curr Opin Clin Nutr Metab Care 2002; 5:19.
3. Garrison GM, Robelia PM, Pecina JL, Dawson NL. Comparing performance of 30-day readmission risk classifiers among hospitalized primary care patients. J Eval Clin Pract 2017; 23:524.
4. Jennings LA, Laffan AM, Schlissel AC, et al. Health Care Utilization and Cost Outcomes of a Comprehensive Dementia Care Program for Medicare Beneficiaries. JAMA Intern Med 2019; 179:161.
5. Elsawy B, Higgins KE. The geriatric assessment. Am Fam Physician 2011; 83:48.
6. http://www.geronet.ucla.edu/images/stories/docs/professionals/Geri_Pre-visit_Questionnaire.pdf (Accessed on November 14, 2011).
7. Reuben DB. Medical care for the final years of life: "When you're 83, it's not going to be 20 years". JAMA 2009; 302:2686.
8. Saliba D, Elliott M, Rubenstein LZ, et al. The Vulnerable Elders Survey: a tool for identifying vulnerable older people in the community. J Am Geriatr Soc 2001; 49:1691.
9. Min L, Yoon W, Mariano J, et al. The vulnerable elders-13 survey predicts 5-year functional decline and mortality outcomes in older ambulatory care patients. J Am Geriatr Soc 2009; 57:2070.
10. Min LC, Elliott MN, Wenger NS, Saliba D. Higher vulnerable elders survey scores predict death and functional decline in vulnerable older people. J Am Geriatr Soc 2006; 54:507.

11. Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173:489.
12. Reuben DB, Borok GM, Wolde-Tsadik G, et al. A randomized trial of comprehensive geriatric assessment in the care of hospitalized patients. N Engl J Med 1995; 332:1345.
13. Ware JE, et al. SF12: an even shorter health survey. Med Outcomes Trust Bull 1996; 4:2.
14. https://www.assessmentcenter.net/documents/InstrumentLibrary.pdf (Accessed on August 05, 2015).
15. Studenski S, Perera S, Patel K, et al. Gait speed and survival in older adults. JAMA 2011; 305:50.
16. Odden MC, Peralta CA, Haan MN, Covinsky KE. Rethinking the association of high blood pressure with mortality in elderly adults: the impact of frailty. Arch Intern Med 2012; 172:1162.
17. Hemmy LS, Linskens EJ, Silverman PC, et al. Brief Cognitive Tests for Distinguishing Clinical Alzheimer-Type Dementia From Mild Cognitive Impairment or Normal Cognition in Older Adults With Suspected Cognitive Impairment. Ann Intern Med 2020; 172:678.
18. Arroll B, Khin N, Kerse N. Screening for depression in primary care with two verbally asked questions: cross sectional study. BMJ 2003; 327:1144.
19. Rinaldi P, Mecocci P, Benedetti C, et al. Validation of the five-item geriatric depression scale in elderly subjects in three different settings. J Am Geriatr Soc 2003; 51:694.
20. Levis B, Sun Y, He C, et al. Accuracy of the PHQ-2 Alone and in Combination With the PHQ-9 for Screening to Detect Major Depression: Systematic Review and Meta-analysis. JAMA 2020; 323:2290.
21. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 2001; 16:606.
22. Hoyl MT, Alessi CA, Harker JO, et al. Development and testing of a five-item version of the Geriatric Depression Scale. J Am Geriatr Soc 1999; 47:873.
23. Reuben DB, Tinetti ME. Goal-oriented patient care--an alternative health outcomes paradigm. N Engl J Med 2012; 366:777.
24. Reuben DB, Jennings LA. Putting Goal-Oriented Patient Care Into Practice. J Am Geriatr Soc 2019; 67:1342.
25. Rockwood K, Howlett S, Stadnyk K, et al. Responsiveness of goal attainment scaling in a randomized controlled trial of comprehensive geriatric assessment. J Clin Epidemiol 2003; 56:736.

26. Jennings LA, Ramirez KD, Hays RD, et al. Personalized Goal Attainment in Dementia Care: Measuring What Persons with Dementia and Their Caregivers Want. J Am Geriatr Soc 2018; 66:2120.
27. Tinetti ME, Naik AD, Dindo L, et al. Association of Patient Priorities-Aligned Decision-Making With Patient Outcomes and Ambulatory Health Care Burden Among Older Adults With Multiple Chronic Conditions: A Nonrandomized Clinical Trial. JAMA Intern Med 2019; 179:1688.
28. Sudore RL, Fried TR. Redefining the "planning" in advance care planning: preparing for end-of-life decision making. Ann Intern Med 2010; 153:256.
29. Austin CA, Mohottige D, Sudore RL, et al. Tools to Promote Shared Decision Making in Serious Illness: A Systematic Review. JAMA Intern Med 2015; 175:1213.
30. Oczkowski SJ, Chung HO, Hanvey L, et al. Communication Tools for End-of-Life Decision-Making in Ambulatory Care Settings: A Systematic Review and Meta-Analysis. PLoS One 2016; 11:e0150671.
31. Sudore RL, Schillinger D, Katen MT, et al. Engaging Diverse English- and Spanish-Speaking Older Adults in Advance Care Planning: The PREPARE Randomized Clinical Trial. JAMA Intern Med 2018; 178:1616.
32. Kuo HK, Scandrett KG, Dave J, Mitchell SL. The influence of outpatient comprehensive geriatric assessment on survival: a meta-analysis. Arch Gerontol Geriatr 2004; 39:245.
33. Stuck AE, Egger M, Hammer A, et al. Home visits to prevent nursing home admission and functional decline in elderly people: systematic review and meta-regression analysis. JAMA 2002; 287:1022.
34. Elkan R, Kendrick D, Dewey M, et al. Effectiveness of home based support for older people: systematic review and meta-analysis. BMJ 2001; 323:719.
35. Huss A, Stuck AE, Rubenstein LZ, et al. Multidimensional preventive home visit programs for community-dwelling older adults: a systematic review and meta-analysis of randomized controlled trials. J Gerontol A Biol Sci Med Sci 2008; 63:298.
36. Bachmann S, Finger C, Huss A, et al. Inpatient rehabilitation specifically designed for geriatric patients: systematic review and meta-analysis of randomised controlled trials. BMJ 2010; 340:c1718.
37. Briggs R, McDonough A, Ellis G, et al. Comprehensive Geriatric Assessment for community-dwelling, high-risk, frail, older people. Cochrane Database Syst Rev 2022; 5:CD012705.
38. Yao NA, Ritchie C, Cornwell T, Leff B. Use of Home-Based Medical Care and Disparities. J Am Geriatr Soc 2018; 66:1716.

39. Ellis G, Gardner M, Tsiachristas A, et al. Comprehensive geriatric assessment for older adults admitted to hospital. Cochrane Database Syst Rev 2017; 9:CD006211.
40. Landefeld CS, Palmer RM, Kresevic DM, et al. A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. N Engl J Med 1995; 332:1338.
41. Wilhelmson K, Andersson Hammar I, Westgård T, et al. Positive effects on activities of daily living one year after receiving comprehensive geriatric assessment - results from the randomised controlled study CGA-Swed. BMC Geriatr 2022; 22:180.
42. Flood KL, Maclennan PA, McGrew D, et al. Effects of an acute care for elders unit on costs and 30-day readmissions. JAMA Intern Med 2013; 173:981.
43. Counsell SR, Holder CM, Liebenauer LL, et al. Effects of a multicomponent intervention on functional outcomes and process of care in hospitalized older patients: a randomized controlled trial of Acute Care for Elders (ACE) in a community hospital. J Am Geriatr Soc 2000; 48:1572.
44. Arbaje AI, Maron DD, Yu Q, et al. The geriatric floating interdisciplinary transition team. J Am Geriatr Soc 2010; 58:364.
45. Hung WW, Ross JS, Farber J, Siu AL. Evaluation of the Mobile Acute Care of the Elderly (MACE) service. JAMA Intern Med 2013; 173:990.
46. Ellis G, Whitehead MA, Robinson D, et al. Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials. BMJ 2011; 343:d6553.
47. Booth KA, Simmons EE, Viles AF, et al. Improving Geriatric Care Processes on Two Medical-Surgical Acute Care Units: A Pilot Study. J Healthc Qual 2019; 41:23.
48. Siu AL, Kravitz RL, Keeler E, et al. Postdischarge geriatric assessment of hospitalized frail elderly patients. Arch Intern Med 1996; 156:76.
49. Naylor MD, Brooten D, Campbell R, et al. Comprehensive discharge planning and home follow-up of hospitalized elders: a randomized clinical trial. JAMA 1999; 281:613.
50. Caplan GA, Williams AJ, Daly B, Abraham K. A randomized, controlled trial of comprehensive geriatric assessment and multidisciplinary intervention after discharge of elderly from the emergency department--the DEED II study. J Am Geriatr Soc 2004; 52:1417.
51. Naylor MD, Aiken LH, Kurtzman ET, et al. The care span: The importance of transitional care in achieving health reform. Health Aff (Millwood) 2011; 30:746.
52. Hesselink G, Schoonhoven L, Barach P, et al. Improving patient handovers from hospital to primary care: a systematic review. Ann Intern Med 2012; 157:417.

53. Alakare J, Kemp K, Strandberg T, et al. Systematic geriatric assessment for older patients with frailty in the emergency department: a randomised controlled trial. BMC Geriatr 2021; 21:408.
54. Reuben DB, Frank JC, Hirsch SH, et al. A randomized clinical trial of outpatient comprehensive geriatric assessment coupled with an intervention to increase adherence to recommendations. J Am Geriatr Soc 1999; 47:269.
55. Boult C, Boult LB, Morishita L, et al. A randomized clinical trial of outpatient geriatric evaluation and management. J Am Geriatr Soc 2001; 49:351.
56. Wenger NS, Roth CP, Shekelle PG, et al. A practice-based intervention to improve primary care for falls, urinary incontinence, and dementia. J Am Geriatr Soc 2009; 57:547.
57. Burns R, Nichols LO, Martindale-Adams J, Graney MJ. Interdisciplinary geriatric primary care evaluation and management: two-year outcomes. J Am Geriatr Soc 2000; 48:8.
58. Fletcher AE, Price GM, Ng ES, et al. Population-based multidimensional assessment of older people in UK general practice: a cluster-randomised factorial trial. Lancet 2004; 364:1667.
59. Counsell SR, Callahan CM, Clark DO, et al. Geriatric care management for low-income seniors: a randomized controlled trial. JAMA 2007; 298:2623.
60. Boult C, Reider L, Frey K, et al. Early effects of "Guided Care" on the quality of health care for multimorbid older persons: a cluster-randomized controlled trial. J Gerontol A Biol Sci Med Sci 2008; 63:321.
61. Leff B, Reider L, Frick KD, et al. Guided care and the cost of complex healthcare: a preliminary report. Am J Manag Care 2009; 15:555.
62. Boult C, Reider L, Leff B, et al. The effect of guided care teams on the use of health services: results from a cluster-randomized controlled trial. Arch Intern Med 2011; 171:460.
63. Ganz DA, Koretz BK, Bail JK, et al. Nurse practitioner comanagement for patients in an academic geriatric practice. Am J Manag Care 2010; 16:e343.
64. Reuben DB, Ganz DA, Roth CP, et al. Effect of nurse practitioner comanagement on the care of geriatric conditions. J Am Geriatr Soc 2013; 61:857.
65. Deschodt M, Flamaing J, Haentjens P, et al. Impact of geriatric consultation teams on clinical outcome in acute hospitals: a systematic review and meta-analysis. BMC Med 2013; 11:48.
66. Ellis G, Whitehead MA, O'Neill D, et al. Comprehensive geriatric assessment for older adults admitted to hospital. Cochrane Database Syst Rev 2011; :CD006211.
67. Shields L, Henderson V, Caslake R. Comprehensive Geriatric Assessment for Prevention of Delirium After Hip Fracture: A Systematic Review of Randomized Controlled Trials. J Am

Geriatr Soc 2017; 65:1559.

68. Fisher AA, Davis MW, Rubenach SE, et al. Outcomes for older patients with hip fractures: the impact of orthopedic and geriatric medicine cocare. J Orthop Trauma 2006; 20:172.
69. Marcantonio ER, Flacker JM, Wright RJ, Resnick NM. Reducing delirium after hip fracture: a randomized trial. J Am Geriatr Soc 2001; 49:516.
70. Eamer G, Taheri A, Chen SS, et al. Comprehensive geriatric assessment for older people admitted to a surgical service. Cochrane Database Syst Rev 2018; 1:CD012485.
71. Baroni M, Serra R, Boccardi V, et al. The orthogeriatric comanagement improves clinical outcomes of hip fracture in older adults. Osteoporos Int 2019; 30:907.
72. Van Grootven B, Flamaing J, Dierckx de Casterlé B, et al. Effectiveness of in-hospital geriatric co-management: a systematic review and meta-analysis. Age Ageing 2017; 46:903.
73. Demurtas J, Ecarnot F, Cernesi S, et al. Comprehensive Geriatric Assessment in Cardiovascular Disease. Adv Exp Med Biol 2020; 1216:87.
74. Blanquicett C, Cohen JB, Flowers C, Johnson T 2nd. The Role of the Comprehensive Geriatric Assessment in the Evaluation of the Older Cancer Patient. Oncology (Williston Park) 2019; 33.
75. Kalsi T, Babic-Illman G, Ross PJ, et al. The impact of comprehensive geriatric assessment interventions on tolerance to chemotherapy in older people. Br J Cancer 2015; 112:1435.
76. Corre R, Greillier L, Le Caër H, et al. Use of a Comprehensive Geriatric Assessment for the Management of Elderly Patients With Advanced Non-Small-Cell Lung Cancer: The Phase III Randomized ESOGIA-GFPC-GECP 08-02 Study. J Clin Oncol 2016; 34:1476.
77. Li D, Sun CL, Kim H, et al. Geriatric Assessment-Driven Intervention (GAIN) on Chemotherapy-Related Toxic Effects in Older Adults With Cancer: A Randomized Clinical Trial. JAMA Oncol 2021; 7:e214158.
78. Mohile SG, Mohamed MR, Xu H, et al. Evaluation of geriatric assessment and management on the toxic effects of cancer treatment (GAP70+): a cluster-randomised study. Lancet 2021; 398:1894.
79. Forestier E, Roubaud-Baudron C, Fraisse T, et al. Comprehensive geriatric assessment in older patients suffering from infective endocarditis. A prospective multicentric cohort study. Clin Microbiol Infect 2019; 25:1246.
80. Boureau AS, Trochu JN, Colliard C, et al. Determinants in treatment decision-making in older patients with symptomatic severe aortic stenosis. Maturitas 2015; 82:128.
81. Partridge JS, Harari D, Martin FC, et al. Randomized clinical trial of comprehensive geriatric assessment and optimization in vascular surgery. Br J Surg 2017; 104:679.

82. Kim SW, Han HS, Jung HW, et al. Multidimensional frailty score for the prediction of postoperative mortality risk. JAMA Surg 2014; 149:633.
83. Singh S, Gray A, Shepperd S, et al. Is comprehensive geriatric assessment hospital at home a cost-effective alternative to hospital admission for older people? Age Ageing 2022; 51.

Topic 3009 Version 37.0

GRAPHICS

Questions and simple tests for general screening assessment of frail older patients*

	Question	Indicator (scoring applies to individual domains)	Alternative
Functional status			
Activities of daily living (ADLs)	Bathing, dressing, toileting, transferring, maintaining continence, feeding	Able to complete without assistance; able but with difficulty; unable to complete without assistance	
Instrumental ADLs (IADLs)	Using the telephone, shopping, preparing meals, housekeeping, doing laundry, using public transportation or driving, taking medication, handling finances	Able to complete without assistance; unable to complete without assistance	
Visual impairment			
	Do you have difficulty driving, watching television, reading, or doing any of your daily activities because of your eyesight, even while wearing glasses?[1]	Yes indicates positive screen	Snellen eye chart
Hearing impairment¶			
	Is your age older than 70 years?	1 point	Alternative is Audioscope[2
	Are you of male gender?	1 point	
	Do you have 12 or fewer years of education?	1 point	
	Did you ever see a doctor about trouble hearing?	2 points	
	Without a hearing aid, can you usually hear and understand what a person says without seeing his face if that person whispers to you from across the room?	If no, 1 point	
	Without a hearing aid, can you usually hear and understand what	If no, 2 points	

	a person says without seeing his face if that person talks in a normal voice to you from across the room?		
		≥3 points: positive screen	
Urinary incontinence[Δ]			
	Have you had urinary incontinence (lose your urine) that is bothersome enough that you would like to know how it could be treated?	Yes indicates positive screen	
Malnutrition			
	Have you lost any weight in the last year?[3]	Loss of at least 5% of usual body weight in last year indicates positive screen[3]	
Gait, balance, falls[Δ]			
	Have you fallen two or more times in the past 12 months?	Any yes response indicates positive screen	
	Have you fallen and hurt yourself since your last doctor's visit?		
	Have you been afraid of falling because of balance or walking problems?		
Depression[◇]			
	Over the past two weeks, how often have you been bothered by:	Response score for each: 0: not at all 1: several days 2: more than half the days 3: nearly every day Total ≥3 points: positive screen	
	Little interest or pleasure in doing things?		
	Feeling down, depressed, or hopeless?		
Cognitive problems			
	Three-item recall[4]	<2 items recalled indicates positive screen[4]	
	Clock-drawing test[5]	Any of the following errors indicate positive screen: wrong time, no hands, missing numbers, number substitutions, repetition, refusal[5]	

Environmental problems			
	Home safety checklists[6]		

* All except the Snellen eye chart, Audioscope, and evaluation for cognitive problems can be assessed by self-report using questionnaire.

¶ Questions and response indicators are from the National Health and Nutrition Examination Survey (NHANES) battery.[7]

Δ Questions and response indicators are from the ACOVE-2 Screener.[8]

◇ Questions and response indicators are from the Patient Health Questionnaire-2.[9]

References:

1. *Moore AA, Siu AL. Screening for common problems in ambulatory elderly. Am J Med 1996; 100:438.*
2. *Yueh B, Shapiro N, MacLean CH, Shekelle PG. Screening and management of adult hearing loss in primary care. JAMA 2003; 289:1976.*
3. *Wallace JI, Schwartz RS, LaCroix AZ, Uhlmann RF, Pearlman RA. Involuntary weight loss in older outpatients. J Am Geriatr Soc 1995; 43:329.*
4. *Siu AL. Screening for dementia and investigating its causes. Ann Intern Med 1991; 115:122.*
5. *Lessig MC, Scanlan JM, Nazemi H, Borson S. Time that tells: critical clockdrawing errors for dementia screening. Int Psychogeriatr 2008; 20:459.*
6. *Centers for Disease Control and Prevention; National Center for Injury Prevention and Control. Check for safety: A Home Fall Prevention Checklist for Older Adults. Available at: https://www.cdc.gov/steadi/pdf/check_for_safety_brochure-a.pdf (Accessed on June 18, 2020).*
7. *Reuben DB, Walsh K, Moore AA, et al. Hearing loss in community-dwelling older persons. J Am Geriatr Soc 1998; 46:1008.*
8. *Wenger NS, Roth CP, Shekelle PG, et al. Practice-based intervention to improve primary care for falls, urinary incontinence and dementia. J Am Geriatr Soc 2009; 57:547.*
9. *Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2. Med Care 2003; 41:1284.*

Reproduced with permission from: Reuben DB. Medical care for the final years of life: "When you're 83, it's not going to be 20 years." JAMA 2009; 302:2686. Copyright © 2009 American Medical Association. All rights reserved.

Graphic 64158 Version 28.0

The Vulnerable Elders Survey (VES) 13 scale

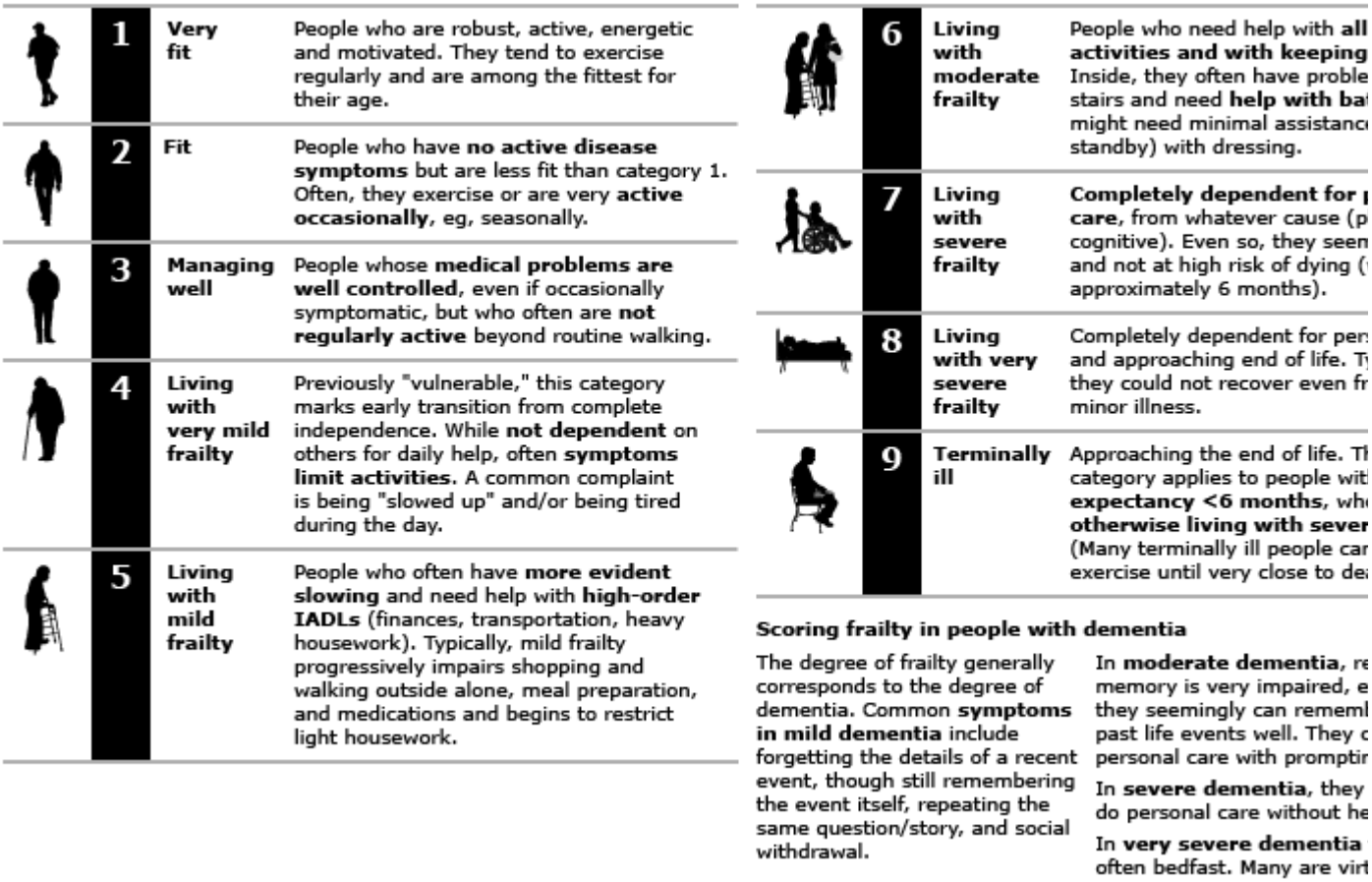
Domain	Score
Age	
75-85	1
>85	3
Self-rated health	
Good, very good, and excellent	0
Fair and poor	1
Activities of daily living (ADLs)/instrumental ADLs (IADLs)	
Needs assistance with	
Bathing or showering	1
Shopping	1
Money management	1
Transfer	1
Light housework	1
Difficulty in special activities	
Kneeling, bending, and stooping	1
Performance of housework (example: scrubbing the floor)	1
Reaching out and lifting upper extremities above the shoulder	1
Lifting and carrying 10 pounds	1
Walking 0.25 miles	1
Writing or handling and grasping small objects	1

Score ≥3: Vulnerable elderly

Adapted from: Saliba D, Elliott M, Rubenstein LZ, et al. The Vulnerable Elders Survey: a tool for identifying vulnerable older people in the community. J Am Geriatr Soc 2001; 49:1691.

Graphic 73154 Version 4.0

Clinical Frailty Scale



1	**Very fit**	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.
2	**Fit**	People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, eg, seasonally.
3	**Managing well**	People whose **medical problems are well controlled**, even if occasionally symptomatic, but who often are **not regularly active** beyond routine walking.
4	**Living with very mild frailty**	Previously "vulnerable," this category marks early transition from complete independence. While **not dependent** on others for daily help, often **symptoms limit activities**. A common complaint is being "slowed up" and/or being tired during the day.
5	**Living with mild frailty**	People who often have **more evident slowing** and need help with **high-order IADLs** (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, and medications and begins to restrict light housework.
6	**Living with moderate frailty**	People who need help with **all activities and with keeping** Inside, they often have proble stairs and need **help with ba** might need minimal assistanc standby) with dressing.
7	**Living with severe frailty**	**Completely dependent for care**, from whatever cause (p cognitive). Even so, they seen and not at high risk of dying (approximately 6 months).
8	**Living with very severe frailty**	Completely dependent for pers and approaching end of life. T they could not recover even fr minor illness.
9	**Terminally ill**	Approaching the end of life. Th category applies to people wit **expectancy <6 months**, wh **otherwise living with sever** (Many terminally ill people car exercise until very close to dea

Scoring frailty in people with dementia

The degree of frailty generally corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story, and social withdrawal.

In **moderate dementia**, re memory is very impaired, e they seemingly can rememl past life events well. They c personal care with promptir

In **severe dementia**, they do personal care without he

In **very severe dementia** often bedfast. Many are virt

IADLs: instrumental activities of daily living.

Reproduced with permission from: Dalhousie University. Clinical Frailty Scale. Available at: https://www.dal.ca/sites/gmr/our-tools/clinical-frailty-scale.html (Accessed on October 20, 2020). Copyright © 2020 Rockwood K, et al.

Graphic 129047 Version 1.0

Katz index of independence in activities of daily living

Activities	Independence	Dependence
Points (1 or 0)	**Points (1)** ***NO* supervision, direction, or personal assistance**	**Points (0)** ***WITH* supervision, direction, personal assistance, or total care**
Bathing **Points:_____**	**(1 point)** Bathes self completely or needs help in bathing only a single part of the body, such as the back, genital area, or disabled extremity.	**(0 points)** Needs help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing.
Dressing **Points:_____**	**(1 point)** Gets clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	**(0 points)** Needs help with dressing self or needs to be completely dressed.
Toileting **Points:_____**	**(1 point)** Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	**(0 points)** Needs help transferring to the toilet and cleaning self or uses bedpan or commode.
Transferring **Points:_____**	**(1 point)** Moves in and out of bed or chair unassisted. Mechanical transferring aides are acceptable.	**(0 points)** Needs help in moving from bed to chair or requires a complete transfer.
Continence **Points:_____**	**(1 point)** Exercises complete self-control over urination and defecation.	**(0 points)** Is partially or totally incontinent of bowel or bladder.
Feeding **Points:_____**	**(1 point)** Gets food from plate into mouth without help. Preparation of food may be done by another person.	**(0 points)** Needs partial or total help with feeding or requires parenteral feeding.
Total points:_____		

6 points: High (patient independent).

0 points: Low (patient very dependent).

Reproduced with permission from: Katz S, Down TD, Cash HR, Grotz RC. Progress in the development of the index of ADL. Gerontologist 1970, 10:20. Copyright © 1970 Oxford University Press.

Graphic 66451 Version 13.0

The Lawton instrumental activities of daily living scale

Activities	Points
Ability to use telephone	
1. Operates telephone on own initiative; looks up and dials numbers	1
2. Dials a few well-known numbers	1
3. Answers telephone but does not dial	1
4. Does not use telephone at all	0
Shopping	
1. Takes care of all shopping needs independently	1
2. Shops independently for small purchases	0
3. Needs to be accompanied on any shopping trip	0
4. Completely unable to shop	0
Food preparation	
1. Plans, prepares, and serves adequate meals independently	1
2. Prepares adequate meals if supplied with ingredients	0
3. Heats and serves prepared meals or prepares meals, but does not maintain adequate diet	0
4. Needs to have meals prepared and served	0
Housekeeping	
1. Maintains house alone with occasional assistance (heavy work)	1

Activities	Points
Laundry	
1. Does personal laundry completely	1
2. Launders small items, rinses socks, stockings, etc	1
3. All laundry must be done by others	0
Mode of transportation	
1. Travels independently on public transportation or drives own car	1
2. Arranges own travel via taxi but does not otherwise use public transportation	1
3. Travels on public transportation when assisted or accompanied by another	1
4. Travel limited to taxi or automobile with assistance of another	0
5. Does not travel at all	0
Responsibility for own medications	
1. Is responsible for taking medication in correct doses at correct time	1
2. Takes responsibility if medication is prepared in advance in separate doses	0
3. Is not capable of dispensing own medication	0
Ability to handle finances	
1. Manages financial matters independently (budgets, writes checks, pays rent and bills, goes to bank); collects and keeps track of income	1
2. Manages day-to-day purchases but needs help with banking, major purchases, etc	1
3. Incapable of handling money	0

2. Performs light daily tasks such as dishwashing, bed making	1
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness	1
4. Needs help with all home maintenance tasks	1
5. Does not participate in any housekeeping tasks	0

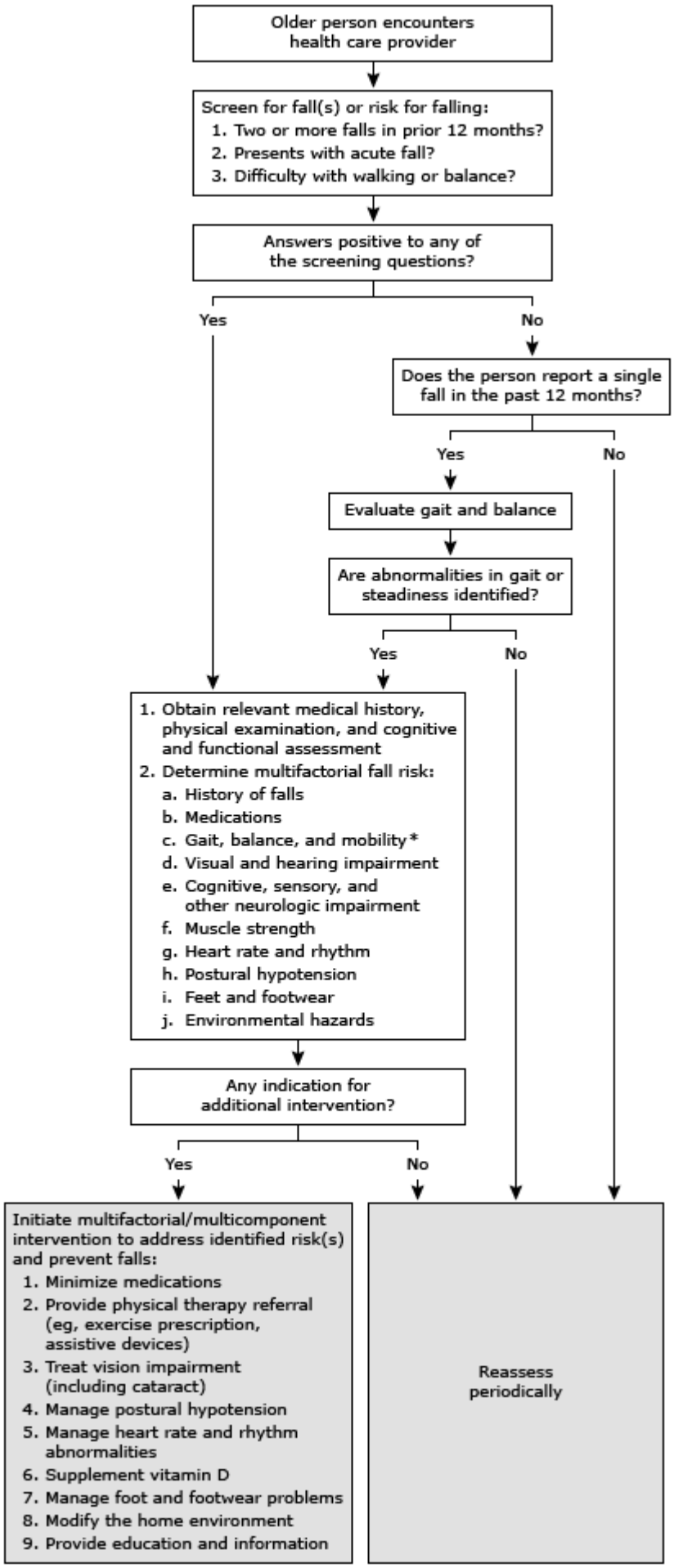
Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1).

A summary score ranges from 0 (dependent, requires significant assistance to live in the community) to 8 (independent, no assistance required to maintain self in community).

Reproduced with permission from: Lawton MP, Brody EM. Assessment of older people: Self-maintaining and instrumental activities of daily living. Gerontologist 1969, 9:179. Copyright © 1969 Oxford University Press.

Graphic 63647 Version 10.0

Prevention falls algorithm


Older person encounters health care provider
Screen for fall(s) or risk for falling:
1. Two or more falls in prior 12 months?
2. Presents with acute fall?
3. Difficulty with walking or balance?
Answers positive to any of the screening questions?
Yes
No
Does the person report a single fall in the past 12 months?
Yes
No
Evaluate gait and balance
Are abnormalities in gait or steadiness identified?
Yes
No
1. Obtain relevant medical history, physical examination, and cognitive and functional assessment
2. Determine multifactorial fall risk:
a. History of falls
b. Medications
c. Gait, balance, and mobility*
d. Visual and hearing impairment
e. Cognitive, sensory, and other neurologic impairment
f. Muscle strength
g. Heart rate and rhythm
h. Postural hypotension
i. Feet and footwear
j. Environmental hazards
Any indication for additional intervention?
Yes
No
Initiate multifactorial/multicomponent intervention to address identified risk(s) and prevent falls:
1. Minimize medications
2. Provide physical therapy referral (eg, exercise prescription, assistive devices)
3. Treat vision impairment (including cataract)
4. Manage postural hypotension
5. Manage heart rate and rhythm abnormalities
6. Supplement vitamin D
7. Manage foot and footwear problems
8. Modify the home environment
9. Provide education and information
Reassess periodically

* Refer to UpToDate topic on risk factors and patient evaluation for falls in older persons.

Reproduced with permission from: The Prevention of Falls in Older Persons: Clinical Practice Guideline (http://www.medcats.com/FALLS/frameset.htm) from the American Geriatrics Society. For more information visit the AGS online at www.americangeriatrics.org.

Graphic 69682 Version 6.0

Screening instruments for late-life depression for use in primary care

	Sensitivity percent	Specificity percent	Inpatient	Outpatient	Physically ill	Cognitive impaire
Two-question screen	97	67	Unknown	Yes	Unknown	No
Geriatric Depression Scale (5-item)	94	81	Yes	Yes	Yes	Unknown
Patient Health Questionnaire-9 (9-item)	88	88	Unknown	Yes	Yes	Unknown
Cornell Scale for Depression in Dementia (19-item)	90	75	Yes	Yes	Unknown	Yes
Center for Epidemiologic Studies - Depression Scale (20-item)	93	73	No	Yes	Unknown	No

Graphic 59906 Version 2.0

PHQ-9 depression questionnaire

Name:	**Date:**			
Over the last 2 weeks, how often have you been bothered by any of the following problems?	**Not at all**	**Several days**	**More than half the days**	**Nearly every day**
Little interest or pleasure in doing things	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
Trouble falling or staying asleep or sleeping too much	0	1	2	3
Feeling tired or having little energy	0	1	2	3
Poor appetite or overeating	0	1	2	3
Feeling bad about yourself, that you are a failure, or that you have let yourself or your family down	0	1	2	3
Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
Moving or speaking so slowly that other people could have noticed; or the opposite, being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
Total ___ =	___	**+** ___	**+** ___	**+** ___
PHQ-9 score ≥10: Likely major depression				
Depression score ranges:				
5 to 9: mild				
10 to 14: moderate				
15 to 19: moderately severe				
≥20: severe				
If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all ___	Somewhat difficult ___	Very difficult ___	Extremel difficult ___

PHQ: Patient Health Questionnaire.

Developed by Drs. Robert L Spitzer, Janet BW Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer, Inc. No permission required to reproduce, translate, display or distribute.

Graphic 59307 Version 13.0

Contributor Disclosures

Katherine T Ward, MD No relevant financial relationship(s) with ineligible companies to disclose. **David B Reuben, MD** No relevant financial relationship(s) with ineligible companies to disclose. **Kenneth E Schmader, MD** No relevant financial relationship(s) with ineligible companies to disclose. **Jane Givens, MD, MSCE** No relevant financial relationship(s) with ineligible companies to disclose.

Contributor disclosures are reviewed for conflicts of interest by the editorial group. When found, these are addressed by vetting through a multi-level review process, and through requirements for references to be provided to support the content. Appropriately referenced content is required of all authors and must conform to UpToDate standards of evidence.

Conflict of interest policy

