Ambulatory Care of the Elderly

11

Nadine Dubowitz, Sonika Pandey, and Elizabeth L. Cobbs

Key Points

- Comprehensive geriatric assessment forms the basis of the medical approach to optimizing health and wellness for older adults.
- Goals of medical care should be customized and balance risks and benefits in a person-centered frame.
- Communication and health literacy are important components of effective ambulatory care.
- Advance care planning discussion and documentation are an important element of comprehensive care of older persons.
- Transition management and referrals to community resources are important components of ambulatory care.

N. Dubowitz, M.D. (✉) • S. Pandey, M.D.• E.L. Cobbs, M.D.
Washington DC Veterans Affairs Medical Center, Washington, DC, USA

George Washington University, Washington, DC, USA
e-mail: nadine.dubowitz@va.gov; sonika.pandey@va.gov; elizabethcobbs@gmail.com

B.K.R. Nair (ed.), *Geriatric Medicine*, DOI 10.1007/978-981-10-3253-0_11

Case Study

Mr. AJ, an 87-year-old retired accountant, is referred to a geriatric clinic due to recurrent hospitalizations for heart failure. He denies any specific complaints. He cannot name his medications but insists that he takes them regularly. His wife provides his medical history of hypertension, diabetes, ischemic cardiomyopathy, hyperlipidemia, osteoarthritis, benign prostatic hyperplasia, and glaucoma. She also reports his memory has been failing. He has had three falls. She now manages their finances and transportation in addition to shopping, meal preparation, and housekeeping. They have a modest retirement income, have been married for 54 years, and have two grown children and three grandchildren. Mr. AJ used to enjoy visiting family and friends, travelling, and reading but now mostly watches television and naps. Mrs. J adds, "I am tired. I hope my health holds up!"

Medications include losartan, metformin, glipizide, furosemide, carvedilol, aspirin, isosorbide mononitrate, atorvastatin, Naproxen, terazosin, eye drops, and acetaminophen/diphenhydramine for sleep.

Physical examination reveals a cheerful, socially interactive gentleman, ambulating slowly with a cane. He has difficulty in hearing. His blood pressure and finger-stick glucose are elevated. He is not dyspneic with ambulation, but his jugular venous pressure is elevated. He has bibasilar rales and bilateral lower extremity pitting edema.

11.1 The Importance of Ambulatory Care for Older Adults

As the world's population ages at an unprecedented rate with increasing life expectancy, growing numbers of the oldest old, and changing family structures, many nations have endorsed an increase in home- and community-based care to support older persons to remain in the community [1]. Ambulatory clinics provide services for screening and prevention, diagnosis and management, and continuity of care and support for older persons to maintain health and function.

11.2 Health Status of Older Adults

Older adults comprise a heterogeneous population whose health-care needs vary widely and evolve over time. The majority are well but more likely to have chronic medical conditions. Those with chronic medical conditions are more likely to experience functional impairment. Common diseases may present atypically with geriatric syndromes such as falls, cognitive impairment, urinary incontinence, and frailty [2]. The detection of geriatric syndromes and risk for functional decline is key to successful ambulatory geriatrics. The health needs of well older persons are well served by general primary care clinics, but for those with a mix of acute and chronic conditions and declining functional capacity, specialized geriatric clinics are helpful.

11.3 Person-Centered Care

Person-centered health care is relationship-based and addresses the whole person in the context of their family [3]. The person-centered model recognizes and respects each patient's unique culture, values, preferences, and needs. Patients and their families deserve to feel welcomed and respected by their health-care providers and to know that their preferences for management are honored. This trusting relationship improves the ability of the providers to assist patients and families through challenging episodes in life, often through to the end of life. The US medical home model provides team-based health-care delivery and comprehensive care that is patient-centered, with emphasis on accessibility, quality, and safety. Programs such as the US *Annual Wellness Visit for Medicare Beneficiaries* provide a *Personalized Prevention Plan* for recommended services [4].

11.4 Environment of Care

Clinics serving older adults should incorporate design and furnishings that support accessibility, safety, function, and comfort. Staff assigned to greet patients should be skilled in customer service. The reception desk should be accessible to patients using wheelchairs. The waiting room should provide adequate space for patients and families. Chairs should have firm but comfortable upholstery and supportive arm rests to allow patients to push up with their arms when arising. A wheelchair-accessible bathroom should be nearby. A wheelchair scale is helpful. Doorways should accommodate wheelchairs. Contrasting colors help persons with visual impairment navigate the halls. A hallway long enough to observe gait stability and speed is desirable. Examination rooms should be large enough to accommodate the patient and the family. Electronically adjustable examination tables that transform to chair configuration to allow mobility-challenged patients to transfer and then have the position changed to an examination table with the necessary height and position are very helpful.

11.5 History and Physical Examination

The history and physical examination are vital to an accurate assessment. The interview and examination process also provide opportunities to build the relationship between the provider and patient. Techniques that communicate respect and allow the patient and family to tell their story are essential. Many clinics use questionnaires to facilitate information transfer. Use of open-ended questions and active listening help the provider build rapport and at the same time gain insight into the older person's functional level and understanding of their health status [5]. With permission from the patient, providers should obtain collateral history from the caregiver or family member who knows the patient. Many older adults do not self-report events such as falls, incontinence, or mood changes, sometimes assuming such signs and symptoms are a normal part of aging and cannot be ameliorated.

Table 11.1 Activities of daily living

Basic activities of daily living Independence = 1 Dependence = 0 (with supervision, direction, personal assistance, or total care)	Instrumental activities of daily living Independence = 1 Varying degrees of dependence or need of significant assistance = 0	Advanced activities of daily living
Bathing		
Dressing	Using telephone	Occupational
Toileting	Shopping	Recreational
Transferring	Preparing food	Travel
Continence	Housekeeping	
Feeding	Doing laundry	
	Managing transportation	
	Managing medications	
6 points: patient independent 0 points: patient very dependent	Managing finances	

Adapted from [6, 7]

11.6 Functional Assessment

Older persons with chronic medical conditions are at risk for functional decline, and the functional decline is the first sign of a medical condition. A functional assessment typically evaluates basic activities of daily living (BADLs), instrumental activities of daily living (IADLs), and advanced activities of daily living (ADDLs) [6, 7] (see Table 11.1). Approximately 17% of community-dwelling older persons have at least one IADL dependency [8].

> Mr. J's functional decline was reflected by recurrent hospitalizations and inability to manage IADLs and falls. Upon examination, his external auditory canals are occluded by cerumen. A cognitive assessment reveals moderate decline in memory and executive function. His gait is unsteady. His wife has taken on the role of caregiver and the burden of additional IADLs.

11.7 Comprehensive Geriatric Assessment

Recognition of the complex interaction of age-related physiologic changes, multiple comorbid illnesses, and functional stressors helps determine the health-care needs of older adults. Many older persons with multiple chronic conditions have daily symptoms, use multiple medications, visit several health-care providers, and require assistance with their activities of daily living (ADLs). Such individuals are

likely to utilize various health-care settings such as the emergency department (ED), acute care hospital, rehabilitation, and nursing home. They are at risk of poor health outcomes and functional decline.

The ambulatory clinic is an ideal setting for comprehensive assessment that addresses domains beyond the usual medical conditions [9]. This comprehensive assessment fosters understanding of the complex interplay between medical, social, psychological, and value factors and elucidates opportunities for interventions to bolster independent function and support patient and family goals for care [10] (see also Chap. 10).

The comprehensive assessment is often performed with participation of multidisciplinary health professionals, depending on the size of the clinic team. In some health systems, geriatric clinic is a referral clinic for episodic consultation, while in others geriatric clinic providers become the primary care providers for older patients with complex medical and psychosocial issues. In many geriatric clinics, a nurse practitioner, social worker, and nurse case manager are part of the core team. Nonclinical office staff may assist in information gathering and screening. Other health professionals (pharmacist, physical therapist, psychiatrist, or psychologist) may be a part of the team. An interdisciplinary approach facilitates comprehensive care management, coordination of services, optimal medication management, and individualized care plans for patients and their caregivers. Information about the patient's goals, values, and preferences for care is a major component of person-centered care and guides providers to tailor plans of care.

11.8 Assessment Tools

Rapid screening tools are available to screen various domains of geriatric assessment [11] (see Chap. 10). These tools identify concerns and help target assessments. Strategies to optimize efficiency include using pre-visit questionnaires, initial screening by ancillary staff, and spreading out screening of various domains over multiple visits.

> Mr. J's performance on the Mini-Cog showed 0/3 recall and an abnormal clock draw, confirming impaired memory and executive function. The repeated hospitalizations likely result from his inability to manage his medications destabilizing his chronic conditions [12].

11.9 Medication Management

Medication reconciliation is a critical task. Patients or caregivers should bring to each visit either the medications themselves or a comprehensive list of all (e.g., prescription and over-the-counter) medications, including supplements, with doses.

The most common classes of medications implicated in ED visits for older persons are oral antiplatelet medications, oral hypoglycemics, insulin, and warfarin [13]. One commonly used guideline for medications to avoid is the Beers Criteria [14].

11.10 Screening and Prevention

Increasing evidence is available to guide screening prevention in older persons. In the USA, older persons receive only about 50% of recommended care [15]. Screening for hypertension, diabetes mellitus, breast cancer, glaucoma, osteoporosis, and colorectal cancer is generally recommended. Prostate cancer screening is more controversial but is generally recommended for men over 50 whose life expectancy exceeds 10 years. Limitations in life expectancy, health status, and preferences for care all influence decisions about screening and preventive care. A coordinated effort to prevent falls in older adults has been recommended by the World Health Organization and many other agencies recognizing the personal and societal cost of fall-related injuries [16]. This report describes the importance of building awareness of falls prevention and treatment, improving the assessment of each individual, and facilitating culturally appropriate intervention to reduce falls among older adults [17–19].

While the US Preventive Services Task Force (USPSTF) does not recommend screening older adults for cognitive impairment, it is important to recognize signs of cognitive decline and to conduct further assessments [20].

The immunization status should be checked and acted upon as needed (Table 11.2).

11.11 Communication and Health Literacy

Health literacy reflects capacity to manage health affairs including listening, following directions, filling out forms, interacting with health professionals, and doing basic math calculations. Impairments in hearing, vision, and cognition impact on health literacy. Older adults are likely to have at least one chronic health condition and need to navigate the health-care system and access health information materials and resources [21]. Health literacy is related to health outcomes [22]. Providers may improve the patient's comprehension in multiple ways. Providing a pocket talker to a hearing-impaired patient during a clinic visit may transform an encounter. A pocket talker is a small, battery-operated, movable unit the size of a pack of cards that has an attached microphone and headset (available on amazon.com for about $120). Patient information should be in easy-to-read format with large print (usually 16 point or greater), simple design, and sharp contrast between background and text. Tips and materials are available at Quick Guide to Health Literacy and Older Adults at www.hhs.gov (Accessed 11 Jan 2016).

Table 11.2 Prevention and screening for older adults[a]

Healthy lifestyle			
	Physical activity	Aerobic Strength Flexibility Balance	Exercise benefits persons of all ages and should be tailored. US Department of Health and Human Services. Healthy People 2020 at www.healthypeople.gov (Accessed 18 Jan 2016)
	Tobacco cessation	Screen for smoking	Counsel on how to quit if they currently smoke
	Alcohol	Specific question about frequency and quantity	Physician recommendations effective
Aspirin		Benefits may differ for men and women	Discuss with those at risk for cardiovascular disease
Immunizations			
	Tetanus	Booster doses recommended every 10 years by USPSTF	Tdap (tetanus, diphtheria, pertussis) recommended once for those over 65
	Influenza	Recommended annually	
	Pneumococcal	Revised recommendations available	23-valent polysaccharide vaccine and 13-valent pneumococcal conjugate vaccine available
	Herpes zoster	Recommended for immunocompetent older adults	Recommendations vary
Cancer screening		Decisions should be based on the benefits, risks, and preferences of each individual	
	Prostate	Based on individual specific factors	
	Colorectal	Screening recommended	
	Breast	AGS recommends avoid screening if life expectancy is less than 10 years	
	Cervical	Cervical cancer is rare in older women who have been previously screened	
	Lung	Consider for smokers with >30 pack years of smoking who are between 55 and 80	
Cardiovascular screening			

(continued)

Table 11.2 (continued)

	Blood pressure	Screen annually or biannually	
	Lipids	Can stop screening at 65 if prior screening negative	
	Abdominal aortic aneurysm	One-time ultrasound examination in men 65–75 who have ever smoked	
Functional	Functional assessment	BADLs IADLs Gait speed	Guides clinician to focus on conditions that impact function and quality of life
	Visual	Evidence lacking	
	Hearing	Evidence lacking	
Psychosocial			
	Cognitive	Mini-Mental Status Exam Mini-Cog Clock Drawing Test Memory Impairment Screen Saint Louis University Mental Status (SLUMS) Examination [37] Montreal Cognitive Assessment (MOCA) [38]	Not recommended for those without memory complaints or evidence of functional decline
	Depression	Over the past 2 weeks, have you felt down, depressed, or hopeless? Over the past 2 weeks, have you felt little interest or pleasure in doing things?	Recommended by USPTSF and ACOVE
Osteoporosis		Recommended with varying specifics	
Nutrition	Nutritional assessment	Evidence lacking	
	Vitamin D	Recommend 800–1000 IU daily intake Evidence lacking to guide screening	
	Multivitamins	Evidence lacking	
Falls/mobility		Screen for falls	
Continence		ACOVE recommends screening question	

Table 11.2 (continued)

Medication use		ACOVE recommends the following: 1. Maintain complete list of Rx and OTC 2. Review at each visit 3. Assess for interactions, duplication adherence, and affordability 4. Assess for classes associated with adverse effects 5. Minimize anticholinergics	

USPSTF US Preventive Services Task Force, *AGS* eAmerican Geriatrics Society, *BADLs* basic activities of daily living, *IADLs* instrumental activities of daily living, *ACOVE* Assessing Care of Vulnerable Elders, *Rx* prescription medication, *OTC* over-the-counter medication

[a]Details may be found at: (1) Center for Disease Control, Advisory Committee on Immunization Practices (ACIP). http://cdc.gov. Accessed 18 Jan 2016. (2) US Preventive Services Task Force at www.uspreventiveservicestaskforce.org. Accessed 18 Jan 2016. (3) Center for Disease Control and Prevention, Aging and Health in America at http://www.cdc.gov/features/agingandhealth. Accessed 18 Jan 2016

11.12 Community Resources

In the USA, the Administration on Aging is the principle program in the Department of Health and Human Services promoting the provision of services and programs to help older persons remain independent at home. Home-delivered meals, home health aides, adult day health programs, and transportation are available to varying degrees in different communities. Case manager nurses or social workers may be accessible through local senior centers or offices on aging. US *senior villages* [23] are membership-driven, grass roots organizations offering coordinated access to affordable services such as transportation, health and wellness programs, home repairs, and social and educational activities. Providers should be knowledgeable about community resources and criteria for access. Care management programs may improve patient outcomes and reduce hospital and ED use [24].

The Program of All-Inclusive Care for the Elderly (PACE) is a US program that provides medical and social management and an adult day health center to help frail older persons to remain safely in the community. A specialized interdisciplinary team includes a physician (often a geriatrician), a nurse practitioner, nurses, social workers, a physical therapist, a pharmacist, a dietician, and transportation personnel. Cost savings from decreased hospital use fund increased community services.

Table 11.3 Advance care planning discussion

Element	Special features	Accompanying documents	Special notes
Capacity	Assessment of capacity is decisional specific (e.g., health proxy, financial management, where to live, health-care options)	Cognitive testing may be needed Patient must be able to receive information, understand options, risk and benefits, and consistently communicate preferences	Patient may lack decisional capacity in one domain but have decisional capacity in another
Health-care proxy	Patient should be encouraged to designate health-care proxy in case of future incapacity	Legal paperwork should be completed, e.g., durable power of attorney for health care	Encourage patient to discuss preferences with designated health-care proxy
Preferences, values, goals	Provider provides education about likely outcome of various treatments. Patient provides information about goals, preferences, and values	Patient quotes are helpful. Subject to change over time as health states evolve	When patient requests limits to care, these should be placed in authorized-written orders such as MOLST (medical orders regarding life-sustaining treatment) or POLST (physician orders regarding life-sustaining treatment)

11.13 Advance Care Planning

The long-term relationships between patients and providers create an ideal setting for advance care planning (ACP) discussions. Elements of ACP include capacity to make health-care decisions, health-care proxies, and preferences for care (see Table 11.3). Quotes from the patient may be helpful. ACP documentation should be kept in an accessible location that can be easily located by other health-care providers in the event of a change in health status. ACP discussions naturally evolve over time; updates are frequently needed to reflect changes in goals and plans.

11.14 Caregiver Support

Caregivers are at risk for neglecting their own health and may not recognize symptoms of stress. Providers can monitor caregiver stress and offer education, resources, and support. Caregiver support organizations focused on specific conditions (such as dementia or cancer) are sponsored by local health departments, faith-based communities, and other organizations. National organizations may offer tools for assessment and education (e.g., caregiving information materials from National Institute on Aging at nia.nih.gov; American Medical Association's Caregiver Self-Assessment Questionnaire, ama-assn.org).

11.15 Transition Management

Suboptimal transitions upon hospital discharge contribute to rehospitalizations and poor health outcomes. Collaboration between clinic providers helps ensure medication reconciliation and timely follow-up. Electronic medical records facilitate communication of discharge summary information and effective handover from hospital to community providers [25]. Post hospital phone calls or nurse home visits are often helpful to reduce errors with medications, equipment, treatments, or follow-up care.

11.16 Home Visits

For patients with advanced functional impairment, home visits may be the best option to provide person-centered primary care. Financial payment systems play an important role in determining incentives to providers to deliver home care. In the Veterans Affairs health system in the USA, home-based primary care is a well-established program that provides interdisciplinary care to homebound patients. Patients report high satisfaction rates, and total costs are reduced [26].

11.17 Palliative Care

Palliative care aims to improve the quality of life for patients (and their families) facing life-threatening illness. Early identification of symptoms and expert assessment and treatment of pain and other causes of suffering are key elements (see Programmes, Cancer, and Palliative care at who.int). Clinic providers are positioned to integrate palliative care into the care of older patients by identifying goals and preferences for care, assessing and treating symptoms, and supporting patients and families around decisions around medical interventions. Home hospice brings an added layer of support for patients for whom death is expected.

11.18 Population Management of Older Persons

Clinic patient panels present a major opportunity to manage population health for older persons. The electronic medical record allows tracking process measures (such as vaccinations and advance care planning discussions) and health outcomes (such as blood pressure and hemoglobin A1C). Feedback drives improvements in care.

Quality indicators have been developed to broadly measure the care provided to vulnerable older persons at multiple levels of the health system (including ambulatory clinic), using such tools as Measuring Medical Care Provided to Vulnerable Elders: The Assessing Care of Vulnerable Elders-3 (ACOVE-3) Quality Indicators [27].

System issues (e.g., continuity and coordination of care, end-of-life care, screening, and prevention) should be addressed as well as diseases and syndromes (e.g., depression, dementia, diabetes, urinary incontinence, osteoarthritis, and many

others) [27]. Care management models using clinical guidelines, educational materials, and transition management have been associated with a reduction in hospital use [28, 29].

Hypertension is one example of a chronic medical condition with age-specific recommendations, as noted in the most recent Eighth Joint National Committee (JNC 8) guidelines. For patients 60 years of age and older, initiation of blood pressure medication should be considered if systolic blood pressure is greater than 150 mmHg or diastolic blood pressure is greater than 90 mmHg [30]. The targets for initiation of therapy are set at a higher range than patients under 60 years of age.

Diabetes management is another example of a chronic medical condition in which there are age-related guidelines. The American Diabetes Association has created a framework for target measurements (A1c, lipids, blood pressure) for diabetic patients based on age and life expectancy in its most recent annual report [31]. The report emphasizes the importance of avoiding hypoglycemia as well as screening for depression, cognitive impairment, and other geriatric syndromes. The older adult population is categorized into three broad areas: healthy (with few existing chronic illnesses and intact cognitive and functional status), complications and reduced functionality (multiple chronic illnesses and ADL impairments or cognitive impairment), or vulnerable at the end of life. The framework helps providers create patient-centered treatment plans.

11.19 Elder Abuse and Neglect

A 2011 WHO report cited growing concern about elder abuse in Europe and called for policy development, improved reporting and research, and other interventions to deter mistreatment [32]. Although USPSTF concluded insufficient evidence exists to recommend screening for elder mistreatment, physicians have professional and legal obligations to diagnose, report, and refer victims of abuse [33]. In the USA, the most common report to Adult Protective Services is self-neglect, where older adults are not able to meet their basic needs. Older adults who self-neglect are less likely to live with others, have weekly contact with children or siblings, visit with friends, or participate in religious activities [34–36]. A home visit by a nurse may provide additional information to guide referrals and interventions. A comprehensive assessment guides the determination of whether the older adult can safely live at home once supportive services are arranged. Community organizations may provide assistance with trash removal, cleaning, yard work, grocery shopping, meals, and other domains.

Case Closure

Mr. J underwent removal of the cerumen from his ears and was referred for audiologic testing. Naproxen and diphenhydramine/acetaminophen were discontinued, and a simplified schedule of medication administration was developed, using a pill organizer and cueing from his wife. A bathroom scale was provided, and a plan was developed for measuring daily weights with parameters for

calling the clinic in the event of an increase. Physical therapy evaluated his gait and made a home visit for safety assessment. He continued therapy for balance and gait training. Arrangements were made for an adult day health program 3 days a week with transportation provided. Mr. J was capable of articulating his general goals for his health care and designating Mrs. J as his health-care proxy. "I have lived a wonderful life. I have faith in my doctors. The hospital has taken good care of me. I would definitely want to go back to the hospital if I needed treatment but I don't want to be a burden to my wife or children. I would not want to be on a life support machine." The provider documented this in the Advance Care Planning Discussion section of the medical record. A family meeting resulted with affirmation of the couple's desire to continue living in their home but acknowledgment of their need for assistance. Both adult children offered to provide assistance in housekeeping, financial management, and transportation.

References

1. Kinsella K, Wan H. US Census Bureau, international population reports, P95/09-1, an aging world: 2008. Washington, DC: US Government Printing Office; 2009.
2. Inouye SK, Studenski S, Tinetti ME, Kuchel GA. Geriatric syndromes: clinical, research, and policy implications of a core geriatric concept. J Am Geriatr Soc. 2007;55(5):780–91. http://www.ncbi.nlm.nih.gov/pubmed/17493201
3. pcmh.ahrq.gov. Accessed 10 Jan 16.
4. http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MNLNProducts/MLN-Publications-Items/CMS 1243320.html.
5. Karp F, editor. A clinician's handbook: talking with your older patient. USA: National Institute on Aging, National Institutes of Health, Department of Health and Human Services; 2008. www.nia.nih.gov
6. Katz S, Down TD, Cash HR, Grotz RC. Progress in the development of the index of ADL. Gerontologist. 1970;10:20.
7. Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. Gerontologist. 1969;9:179.
8. Hung WW, Ross JS, Boockvar KS, Siu AL. Recent trends in chronic disease, impairment and disability among older adults in the United States. BMC Geriatr. 2011;11:47.
9. Cohen HJ, et al. A controlled trial of inpatient and outpatient geriatric evaluation and management. N Engl J Med. 2002;346(12):905–12. http://www.ncbi.nlm.nih.gov/pubmed/1190729 1
10. Elsawy B, Higgins K. The geriatric assessment. Am Fam Physician. 2011;83(1):48–56.
11. Tinetti ME, Inouye SK, Gill TM, Doucette JT. Shared risk factors for falls, incontinence, and functional dependence: unifying the approach to geriatric syndromes. JAMA. 1995;273(17):1348–53. http://www.ncbi.nlm.nih.gov/pubmed/7715059
12. Borson S, Scanian J, Brush M, Vitaliano P, Dokmak A. The mini-cog: a cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. Int J Geriatr Pyschiatry. 2000;15(11):1021–7. http://www.ncbi.nlm.nih.gov/pubmed/11113982
13. Budnitz DS, Lovegrove MC, Shehab N, Richards CL. Emergency hospitalizations for adverse drug events in older Americans. N Engl J Med. 2011;365(21):2002–12. http://www.ncbi.nlm.nih.gov/pubmed/26446832
14. American Geriatrics Society. Updated beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2015;63(11):2227–46. http://www.ncbi.nlm.nih.gov/pubmed/22111719

15. McGlynn EA, Asch SM, Adams J, et al. The quality of health care delivered to adults in the United States. N Engl J Med. 2003;348(26):2635–45.
16. WHO Global Report on Falls Prevention in Older Age. Ageing and life course, family and community health; 2007.
17. Tinetti ME, Baker DI, McAvay G, Claus EB, Garrett P, Gottschalk M, Koch ML, Trainor K, Horwitz RI. A multifactorial intervention to reduce the risk of falling among elderly people living in the community. N Engl J Med. 1994;331(13):821–7. http://www.ncbi.nlm.nih.gov/pubmed/8078528
18. Leipzig RM, Whitlock EP, Wolff TA, Barton MB, Michael YL, Harris R, Petitti D, Wilt T, Siu A, US Preventive Services Task Force Geriatric Workgroup. Reconsidering the approach to prevention recommendations for older adults. Ann Intern Med. 2010;153(12):809–14.
19. Gnanadesigan N, Fung CH. Quality indicators for screening and prevention in vulnerable elders. J Am Geriatr Soc. 2007;55(Suppl 2):5417–23.
20. McCarten JR, Anderson P, Kuskowski MA, SE MP, Borson S. Screening for cognitive impairment in an elderly veteran population: acceptability and results using different versions of the Mini-Cog. J Am Geriatr Soc. 2011;59(2):309–31. http://www.ncbi.nlm.nih.gov/pubmed/21314650
21. Centers for Disease Control and Prevention and the Merck Company Foundation. The state of aging and health in America in 2007: executive summary. Whitehouse Station, NJ: The Merck Foundation; 2007.
22. Institute of Medicine. Health literacy: a prescription to end confusion. Washington, DC: National Academies Press; 2004.
23. Village to Village Network in the US. vtvnetwork.org.
24. Counsell SR, Callahan CM, Clark DO, Wanzhu T, Buttar AB, Stump TE, Ricketts GD. Geriatric care management for low-income seniors – a randomized controlled trial. JAMA. 2007;298(22):2623–33. doi:10.1001/jama.298.22.2623. http://www.ncbi.nlm.nih.gov/pubmed/18073358
25. Hesselink G, Schoonhoven L, Barach P, Spijker A, Gademan P, Kalkman C, Liefers J, Vernooij-Dassen M, Wollersheim H. Improving patient handovers from hospital to primary care: a systematic review. Ann Intern Med. 2012;157(6):417–28.
26. Edes T, Kinosian B, Vuckovic NH, Nichols LO, Becker MM, Hossain M. Better access, quality, and cost for clinically complex veterans with home-based primary care. J Am Geriatr Soc. 2014;62(10):1954–61.
27. Wenger NS, Roth CP, Shekelle P, ACOVE Investigators. Introduction to the assessing care of vulnerable elders-3 quality indicator measurement set. J Am Geriatr Soc. 2007;55(Suppl 2):S247–52. PubMed PMID: 17910544
28. Counsell SR, Callahan CM, Tu W, et al. Cost analysis of the Geriatric Resources for Assessment and Care of Elders care management intervention. J Am Geriatr Soc. 2009;57(8):1420–6.
29. Brown RS, Peikes D, Peterson G, et al. Six features of Medicare Coordinated Care Demonstration programs that cut hospital admissions of high-risk patients. Health Aff (Millwood). 2012;31(6):1156–66.
30. James PA, Oparil S, Carter BL, Cushman WC, Dennison-Himmelfarb C, Handler J, Lackland DT, LeFevre ML, MacKenzie TD, Ogedegbe O, Smith SC, Svetkey LP, Taler SJ, Townsend RR, Wright JT, Narva AS, Ortiz E. 2014 evidence-based guidelines for the management of high blood pressure in adult: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA. 2014;311(5):507–20. doi:10.1001/jama.2013.284427.
31. www.diabetes.org/diabetescare. American Diabetes Association, Standards of Medical Care in Diabetes – 2016. J Clin Appl Res Educ. 2016;39(Suppl 1).
32. 2011 World Health Oganization. European report on preventing elder maltreatment at euro.who.int. Accessed 31 Jan 2016.
33. Hoover RM, Polson M. Detecting elder abuse and neglect: assessment and intervention. Am Fam Physician. 2014;89(6):453–60.

34. Burnett J, Regev T, Pickens S, Pratt LL, Aung K, Moore J, Dyer CB. Social networks: a profile of the elderly who self-neglect. J Elder Abuse Negl. 2006;18(4):35–49.
35. Dyer CB, Pickens S, Birnett J. Vulnerable elders. When it is no longer safe to live alone. JAMA. 2007;298(12):1448–50.
36. Mosqueda L, Dong X. Elder abuse and self-neglect: "I don't care anything about going to the doctor, to be honest…". JAMA. 2011;306(5):532–40. PubMed PMID: 21813431
37. Tariq SH, Tumosa N, Chibnall JT, Perry MH, Morley JE. Comparison of the Saint Louis University Mental Status Examination and the Mini-Mental State Examination for detecting dementia and mild neurocognitive disorder: a pilot study. Am Ger Psychiatry. 2006;14(11): 900–10.
38. Nasreddine ZS, Phillips NA, Bedirian V, Charbonneau S, Whitehead V, Collin I, Cummings JL, Chertkow H. The Montreal Cognitive Assessment (MoCA): a brief screening tool for mild cognitive impairment. J Am Geriatr Soc. 2005;53:695–9.