ACOVE Quality Indicators*

Topic Area	Quality Indicators
Continuity and coordination of care	
Identify source of care	1. ALL vulnerable elders should be able to identify a provider or a clinic that they would call when in need of medical care or should know the phone number or other mechanism by which they can reach this source of care.
Medication follow-up	2. IF an outpatient vulnerable elder is started on a new prescription medication and he or she has a follow-up visit with the prescribing physician, THEN the medical record at the follow-up visit should document one of the following: 1) the medication is being taken, 2) the physician asked about the medication (for example, side effects or adherence or availability), or 3) the medication was not started because it was not needed or was changed.
Medication continuity between physicians	3. IF a vulnerable elder is under the outpatient care of two or more physicians, and one physician has prescribed a new prescription medication or a change in medication (medication termination or change in dosage), THEN subsequent medical record entries by the nonprescribing physician should acknowledge the medication change.
Reason for consultation	4. IF an outpatient vulnerable elder is referred to a consultant physician, THEN the reason for consultation should be documented in the consultant's note.
Document consultant recommendations	5. IF an outpatient vulnerable elder is referred to a consultant and subsequently visits the referring physician after the visit with the consultant, THEN the referring physician's follow-up note should document the consultant's recommendations, or the medical record should include the consultant's note, within 6 weeks or at the time of the follow-up visit, whichever is later.
Diagnostic test follow-up	6. IF the outpatient medical record documents that a diagnostic test was ordered for a vulnerable elder, THEN the medical record at the follow-up visit should document one of the following: 1) the result of the test, 2) the test was not needed or reason why it will not be performed, or 3) the test is still pending.
Medication continuity after hospitalization	7. IF a vulnerable elder is discharged from a hospital to home and he or she received a new prescription medication or a change in medication (medication termination or change in dosage) before discharge, THEN the outpatient medical record should acknowledge the medication change within 6 weeks of discharge.
Continuity of test results between care venues	8. IF a vulnerable elder is discharged from a hospital to home or to a nursing home and the transfer form or discharge summary indicates that a test result is pending, THEN the outpatient or nursing home medical record should include the test result within 6 weeks of hospital discharge.
Post-hospitalization follow-up appointment	9. IF a vulnerable elder is discharged from a hospital to home or to a nursing home and the hospital medical record specifies a follow-up appointment for a physician visit or a treatment (for example, physical therapy or radiation oncology), THEN the medical record should document that the visit or treatment took place or that it was postponed or not needed.
Hospital follow-up within 6 weeks	10. IF a vulnerable elder is discharged from a hospital to home and survives at least 4 weeks after discharge, THEN he or she should have a follow-up visit or documented telephone contact within 6 weeks of discharge AND the physician's medical record documentation should acknowledge the recent hospitalization.
Medical record transfer	11. IF a vulnerable elder is transferred between emergency departments or between acute care facilities, THEN the medical record at the receiving facility should include medical records from the transferring facility or should acknowledge transfer of such medical records.
Discharge summary in chart	12. IF a vulnerable elder is discharged from a hospital to home or to a nursing home, THEN there should be a discharge summary in the outpatient physician or nursing home medical record within 6 weeks.
Interpreter	13. IF a vulnerable elder is deaf or does not speak English, THEN an interpreter or translated materials should be employed to facilitate communication between the vulnerable elder and the health care provider.
Related indicators	Follow-up suicidal thoughts: Depression, QI 13 Follow-up of depression treatment: Depression, QI 15, 16, 17 Continuity of care preference: End-of-life care, QI 3, 4, 5, 6, 8, 9 Continuity of surrogate specification: End-of-life care, QI 2, 5 Contact next of kin after death: End-of-life care, QI 14 Discharge planning in the hospital: Hospital care, QI 2 Cardiac rehabilitation after MI or coronary artery bypass grafting: Ischemic heart disease, QI 12 Up-to-date medication list across providers: Medication use, QI 3 Follow-up response to medication: Medication use, QI 4 INR every 6 weeks for warfarin therapy: Medication use, QI 6 Laboratory tests after starting diuretic or ACE inhibitor: Medication use, QI 7, 12 Follow-up response to pain treatment: Pain management, QI 7 Comprehensive geriatric assessment: Preventive care, QI 1, 2 Continuity of eye medications and glasses in the hospital: Vision care, QI 13, 15

Continued on following page

Dementia	
Cognitive and functional screening	1. IF a vulnerable elder is admitted to a hospital or is new to a physician practice, THEN multidimensional assessment of cognitive ability and assessment of functional status should be documented.
Medication review	2. IF a vulnerable elder presents with symptoms of dementia, THEN the physician should review the patient's medication list for initiation of medications that might correspond chronologically to the onset of dementia symptoms.
	3. IF a vulnerable elder presents with symptoms of dementia that correspond in time with the initiation of new medications, THEN the physician should discontinue or justify the necessity of continuing these medications.
Laboratory testing	4. IF a vulnerable elder has newly diagnosed dementia, THEN serum levels of vitamin B_{12} and thyroid-stimulating hormone should be measured.
Neuroimaging	5. IF a vulnerable elder has signs of dementia and focal neurologic findings that suggest an intracranial process, THEN he or she should be offered neuroimaging (brain computed tomography or magnetic resonance imaging).
Cholinesterase inhibitors	6. IF a vulnerable elder has mild to moderate Alzheimer disease, THEN the treating physician should discuss treatment with a cholinesterase inhibitor with the patient and the primary caregiver (if available).
Caregiver support and patient safety	7. IF a vulnerable elder with dementia has a caregiver (and, if capable, the patient assents), THEN the physician should discuss or refer the patient and caregiver for discussion about patient safety, provide education on how to deal with conflicts at home, and inform them about community resources for dementia.
Stroke prophylaxis	8. IF a vulnerable elder with dementia has cerebrovascular disease, THEN he or she should be offered appropriate prophylaxis against stroke.
Screening for depression	9. IF a vulnerable elder has dementia, THEN he or she should be screened for depression during the initial evaluation.
Depression treatment	10. IF a vulnerable elder with dementia has depression, THEN he or she should be treated for the depression.
Driving privileges	11. IF a vulnerable elder has newly diagnosed dementia, THEN the diagnosing physician should advise the patient not to drive a motor vehicle or request that the Department of Motor Vehicles (or an equivalent agency) retest the patient's ability to drive, or refer the patient to a drivers' safety course that includes assessment of driving ability (consistent with state laws).
Restraints	12. IF a vulnerable elder with dementia is to be physically restrained in the hospital, THEN the target behavioral disturbance or safety issue justifying use of the restraints must be identified to the consenting person (patient or legal guardian) and documented in the chart.
	13. IF a vulnerable elder is physically restrained and the target behavioral disturbance requiring restraint is identified, THEN the health care team should include methods other than physical restraints in the care plan.
	14. IF a vulnerable elder is placed in physical restraints, THEN each of the following measures should be enacted: 1) Consistent release from the restraints at least every 2 hours; 2) Face-to-face reassessment by a physician or nurse at least every 4 hours and before renewal of the restraint order; 3) Observation at least every 15 minutes, and more frequently if indicated by the patient's condition, while the patient is in restraints; 4) Interventions every 2 hours (or as indicated by patient's condition or needs) related to nutrition, hydration, personal hygiene, toileting, and range of motion exercises.
Related indicators	Evaluate patients with cognitive impairment for depression: Depression, QI 1, 2 Evaluate patients for suicidal ideation and follow-up: Depression, QI 4, 5, 13 Decision making for patients with dementia: End-of-life care, QI 2, 3 Evaluate cognition at hospital admission and initial examination: Hospital care, QI 1; Preventive care, QI 1, 2 Check capacity before consent for surgery: Hospital care, QI 6 Delirium evaluation and treatment: Hospital care, QI 9 Cognitive evaluation for weight loss: Malnutrition, QI 4 Avoid anticholinergic medication: Medication use, QI 9
Depression	
Recognizing depression	1. IF a vulnerable elder presents with new onset of one of the following symptoms: sad mood, feeling down, insomnia or difficulties with sleep, apathy or loss of interest in pleasurable activities, complaints of memory loss, unexplained weight loss greater than 5% in the past month or 10% over 1 year, or unexplained fatigue or low energy, THEN the patient should be asked about or treated for depression, or referred to a mental health professional within 2 weeks of presentation.
Depression and comorbid disease	2. IF a vulnerable elder presents with onset or discovery of one of the following conditions: stroke, myocardial infarction, dementia, malignancy (excluding skin cancer), chronic pain, alcohol or substance abuse or dependence, anxiety disorder, or personality disorder, THEN the patient should be asked about or treated for depression, or referred to a mental health professional within 2 months of diagnosis of the condition.

Continued on following page

Documenting depression symptoms	3. IF a vulnerable elder receives a diagnosis of a new depression episode, THEN the medical record should document at least three of the nine DSM-IV target symptoms for major depression within the first month of diagnosis.
Suicidality	4. IF a vulnerable elder receives a diagnosis of a new depression episode, THEN the medical record should document on the day of diagnosis the presence or absence of suicidal ideation and psychosis (consisting of, at a minimum, auditory hallucinations or delusions).
	5. IF a vulnerable elder has thoughts of suicide, THEN the medical record should document, on the same date, that the patient either has no immediate plan for suicide or that the patient was referred for evaluation for psychiatric hospitalization.
Depression treatment	6. IF a vulnerable elder is diagnosed with depression, THEN antidepressant treatment, psychotherapy, or electroconvulsive therapy should be offered within 2 weeks after diagnosis unless there is documentation within that period that the patient has improved, or unless the patient has substance abuse or dependence, in which case treatment may wait until 8 weeks after the patient is in a drug- or alcohol-free state.
Choice of antidepressant	7. IF a vulnerable elder is started on an antidepressant medication, THEN the following medications should not be used as first- or second-line therapy: tertiary amine tricyclics, MAOIs (unless atypical depression is present), benzodiazepines, or stimulants (except methylphenidate).
Psychotic or vegetative depression	8. IF a vulnerable elder has depression with psychotic features (for example, auditory hallucinations, delusions) or has melancholic or vegetative depression with pervasive anhedonia, unreactive mood, psychomotor disturbances, severe terminal insomnia, and weight and appetite loss, THEN he or she should not be treated with psychotherapy alone, unless he or she is unable or unwilling to take medication.
Referral for psychotic depression	9. IF a vulnerable elder has depression with psychotic features, THEN he or she should be referred to a psychiatrist and should receive treatment with a combination of an antidepressant and an antipsychotic, or with electroconvulsive therapy.
Electrocardiogram with tricyclic use	10. IF a vulnerable elder with a history of cardiac disease is started on a tricyclic antidepressant, THEN a baseline electrocardiogram should be obtained before initiation of, or within 3 months before, treatment.
Interactions with MAOI	11. IF a vulnerable elder is taking a serotonin reuptake inhibitor, THEN an MAOI should not be used for at least 2 weeks after termination of paroxetine, sertraline, fluvoxamine, and citalopram, and for at least 5 weeks after termination of fluoxetine.
	12. IF a vulnerable elder is taking an MAOI, THEN he or she should not receive medications that interact with MAOIs for at least 2 weeks after termination of the MAOI.
Monitoring suicide risk	13. IF a vulnerable elder is being treated for depression, THEN at each treatment visit suicide risk should be documented if he or she had suicidal ideation during a previous visit.
Follow-up of treatment	14. IF a vulnerable elder is being treated for depression with antidepressants, THEN the antidepressants should be prescribed at appropriate starting doses, and they should have an appropriate titration schedule to a therapeutic dose, therapeutic blood level, or remission of symptoms by 12 weeks.
	15. IF a vulnerable elder has no meaningful symptom response after 6 weeks of treatment, THEN one of the following treatment options should be initiated by the 8th week of treatment: medication dose should be optimized or the patient should be referred to a psychiatrist (if initial treatment was medication) or medication should be initiated or referral to a psychiatrist should be offered (if initial treatment was psychotherapy alone).
	16. IF a vulnerable elder responds only partially after 12 weeks of treatment, THEN one of the following treatment options should be instituted by the 16th week of treatment: switch to a different medication class or add a second medication to the first (if initial treatment includes medication), add psychotherapy (if the initial treatment was medication), try medication (if initial treatment was psychotherapy without medication), consider electroconvulsive therapy, or refer to a psychiatrist.
Continuing antidepressant therapy	17. IF a vulnerable elder has responded to antidepressant medication, THEN he or she should be continued on the drug at the same dose for at least 6 months and should make at least one clinician contact (office visit or telephone) during that time period.
Related indicators	Screen and treat depression in patients with cognitive impairment: Dementia, QI 9, 10 Depression evaluation for weight loss: Malnutrition, QI 4 Evaluate affect at initial examination: Preventive care, QI 1, 2
Diabetes mellitus	
Glycated hemoglobin measurement	1. IF a vulnerable elder has diabetes, THEN his or her glycated hemoglobin level should be measured at least every 12 months.
Improving glycemic control	2. IF a vulnerable elder has an elevated glycated hemoglobin level, THEN he or she should be offered a therapeutic intervention aimed at improving glycemic control within 3 months if the glycated hemoglobin level is 9.0% to 10.9%, and within 1 month if the glycated hemoglobin level is 11% or greater.

Continued on following page

Proteinuria screening	3. IF a diabetic vulnerable elder does not have established renal disease and is not receiving an ACE inhibitor or ACE receptor blocker, THEN he or she should receive an annual test for proteinuria.
Treatment of proteinuria	4. IF a diabetic vulnerable elder has proteinuria, THEN he or she should be offered therapy with an ACE inhibitor.
Regular blood pressure measurement	5. IF a vulnerable elder has diabetes, THEN his or her blood pressure should be checked at each outpatient visit.
Diabetic education	6. IF a diabetic vulnerable elder has a glycated hemoglobin level of 10% or greater, THEN he or she should be referred for diabetic education at least annually.
Blood pressure control	7. IF a diabetic vulnerable elder has elevated blood pressure, THEN he or she should be offered a therapeutic intervention to lower blood pressure within 3 months if blood pressure is 150 to 160/90 to 100 mm Hg or within 1 month if blood pressure is greater than 160/100 mm Hg
Aspirin therapy	8. ALL diabetic vulnerable elders who are not on other anticoagulant therapy should be offered daily aspirin therapy.
Lipid treatment	9. IF a diabetic vulnerable elder has a fasting total cholesterol level of 240 g/dL or greater, THEN he or she should be offered an intervention to lower cholesterol
Routine eye examination	10. IF a diabetic vulnerable elder is not blind, THEN he or she should receive an annual dilated eye examination performed by an ophthalmologist, optometrist, or diabetes specialist.
Related indicators	Chlorpropamide use: Medication use, QI 8 Retinal examination: Vision care, QI 7, 8
End-of-life care	
Advance directives and surrogates	1. ALL vulnerable elders should have in their outpatient chart one of the following: 1) an advance directive indicating the patient's surrogate decision maker, 2) documentation of a discussion about who would be a surrogate decision maker or a search for a surrogate, or 3) indication that there is no identified surrogate.
	2. IF a vulnerable elder with dementia, coma, or altered mental status is admitted to the hospital, THEN within 48 hours of admission the medical record should 1) contain an advance directive indicating the patient's surrogate decision maker, 2) document a discussion about who would be a surrogate decision maker or a discussion about a search for a surrogate, or 3) indicate that there is no identified surrogate.
Documentation of care preferences	3. IF a vulnerable elder carries a diagnosis of severe dementia, is admitted to the hospital, and survives 48 hours, THEN within 48 hours of admission, the medical record should document that the patient's prior preferences for care have been considered or that these preferences could not be elicited or are unknown.
	4. IF a vulnerable elder is admitted directly to the intensive care unit (from the outpatient setting or emergency department) and survives 48 hours, THEN within 48 hours of admission, the medical record should document that the patient's preferences for care have been considered or that these preferences could not be elicited or are unknown.
Preferences about future health states	5. IF a vulnerable elder indicates (during an interview) that he or she would rather die than live permanently comatose, ventilated, or tube fed, THEN 1) the chart should document a discussion of life-sustaining treatment preferences, 2) the chart should contain an advance directive, or 3) the patient should indicate (during the interview) that he or she discussed this topic with the physician or does not wish to discuss this.
Advance directive continuity	6. IF a vulnerable elder has an advance directive in the outpatient, inpatient, or nursing home medical record or the patient reports the existence of an advance directive in an interview, and the patient receives care in a second venue, THEN 1) the advance directive should be present in the medical record at the second venue or 2) documentation should acknowledge its existence, its contents, and the reason that it is not in the medical record.
Mechanical ventilation preferences	7. IF a vulnerable elder requires mechanical ventilation during a hospitalization (except short-term and postoperative mechanical ventilation), THEN within 48 hours of the initiation of mechanical ventilation the medical record should document the goals of care and the patient's preference for mechanical ventilation or why this information is unavailable.
Life-sustaining care decisions	8. IF a vulnerable elder with decision-making capacity has orders written in the hospital or the nursing home to withhold or withdraw a particular treatment (for example, a do-not-resuscitate order or an order not to initiate dialysis), THEN the medical record should document 1) patient participation in the decision or 2) why the patient did not participate in the decision.
Care consistency with preferences	9. IF a vulnerable elder has specific treatment preferences (for example, a do-not-resuscitate order, no tube feeding, or no hospital transfer) documented in a medical record, THEN these treatment preferences should be followed.
Mechanical ventilator withdrawal	10. IF a noncomatose vulnerable elder is not expected to survive and a mechanical ventilator is withdrawn or intubation is withheld, THEN the patient should receive (or have orders available for) an opiate or benzodiazepine or barbiturate infusion to reduce dyspnea, and the chart should document whether the patient has dyspnea.

Continued on following page

Care of the dying patient	
Dyspnea treatment	11. IF a vulnerable elder who had dyspnea in the last 7 days of life died an expected death, THEN the chart should document how the dyspnea was treated and follow-up should be documented about the dyspnea.
Pain treatment	12. IF a vulnerable elder who was conscious during the last 3 days of life died an expected death, THEN the medical record should contain documentation about pain or lack of pain during the last 3 days of life.
Spirituality	13. IF a vulnerable elder who was conscious during the last 3 days of life died an expected death, THEN the medical record should contain documentation about spirituality or how the patient was dealing with death or religious feelings.
Search for next of kin	14. IF a vulnerable elder without known family or next of kin died in the hospital, THEN the chart should document a search for next of kin.
Related indicators	Caregiver support: Dementia, QI 7 Permanent urinary catheter: Urinary incontinence, QI 10
Falls	
Asking about falls	1. ALL vulnerable elders should have documentation that they were asked at least annually about the occurrence of recent falls.
Detecting balance and gait disturbances	2. ALL vulnerable elders should have documentation that they were asked about or examined for the presence of balance or gait disturbances at least once.
Basic fall evaluation	3. IF a vulnerable elder reported two or more falls in the past year, or a single fall with injury requiring treatment, THEN there should be documentation that a basic fall evaluation was performed that resulted in specific diagnostic and therapeutic recommendations.
Gait–mobility and balance evaluation	4. IF a vulnerable elder reports or is found to have new or worsening difficulty with ambulation, balance, or mobility, THEN there should be documentation that a basic gait, mobility, and balance evaluation was performed within 6 months that resulted in specific diagnostic and therapeutic recommendations.
Exercise and assistive device prescription	5. IF a vulnerable elder demonstrates decreased balance or proprioception, or increased postural sway, THEN an appropriate exercise program should be offered and an evaluation for an assistive device performed.
	6. IF a vulnerable elder is found to have problems with gait, strength (for example, ≤4 out of 5 on manual muscle testing, or the need to use his or her arms to rise from a chair), or endurance (for example, dyspnea on mild exertion), THEN an exercise program should be offered.
Related indicators	Avoid tertiary amine tricyclic antidepressants: Depression, QI 7 New medications should have clearly defined indications: Medication use, QI 1 Educate concerning side effects of new medications: Medication use, QI 2 Annual medication review: Medication use, QI 5 Avoid anticholinergic medication: Medication use, QI 9 Annual evaluation of function and pain for osteoarthritis: Osteoarthritis, QI 1 Strengthening program for patients with osteoarthritis: Osteoarthritis, QI 3, 4 Evaluate gait and balance at initial examination: Preventive care, QI 1, 2 Vision evaluation every 2 years: Vision care, QI 1 Corrective lenses for correctable refractive error: Vision care, QI 14 Corrective lenses in the hospital: Vision care, QI 15
Hearing loss	
Screening for hearing loss	1. ALL vulnerable elders should have a hearing screening examination as part of the initial evaluation.
Formal audiologic evaluation	2. IF a vulnerable elder fails a hearing screening, THEN he or she should be offered a formal audiologic evaluation within 3 months.
Ear examination	3. IF a vulnerable elder has a hearing problem or fails an audiologic screening, THEN he or she should have an ear examination within 3 months.
Referral to audiologist	4. IF a vulnerable elder is a hearing aid candidate, THEN he or she should be offered referral to an audiologist within 3 months after audiologic examination.
Hearing rehabilitation	5. IF a vulnerable elder is a hearing aid candidate, THEN he or she should be offered hearing rehabilitation.
Conductive hearing loss	6. IF a vulnerable elder has conductive hearing loss, THEN he or she should be offered a referral to an otolaryngologist.

Continued on following page

Related indicators	Interpreter for hearing impaired patient: Continuity and coordination of care, QI 13 Evaluate hearing at initial examination: Preventive care, QI 1, 2
Heart failure	
ACE inhibitor use	1. IF a vulnerable elder has asymptomatic left ventricular dysfunction with a left ventricular ejection fraction of 40% or less, THEN an ACE inhibitor should be offered.
	2. IF a vulnerable elder has symptomatic heart failure and left ventricular ejection fraction of 40% or less, THEN he or she should be offered treatment with an ACE inhibitor.
Medical history	3. IF a vulnerable elder has newly diagnosed heart failure, THEN a history should be taken at the time of diagnosis and hospitalization to document the presence or absence of previous myocardial infarction; coronary artery disease; revascularization; current symptoms of chest pain or angina; history of hypertension, diabetes, hypercholesterolemia, valvular heart disease, or thyroid disease; smoking status; current medications; and functional capacity (for example, New York Heart Association functional status).
Physical examination	4. IF a vulnerable elder has newly diagnosed heart failure, THEN the following physical examination findings should be documented at presentation: body weight; blood pressure; heart rate; and results of lung, cardiac, and abdominal or lower-extremity examination.
Diagnostic testing	5. IF a vulnerable elder has newly diagnosed heart failure, THEN the following studies should be done within 1 month of diagnosis in patients with heart failure (unless the tests were performed within the previous 3 months): chest radiography; electrocardiography; complete blood count; and measurement of serum sodium and potassium, serum creatinine, and thyroid-stimulating hormone (in patients with atrial fibrillation or heart failure of no obvious etiology).
Patient education	6. IF a vulnerable elder has newly diagnosed heart failure, THEN education about disease management should be provided and documented.
Evaluation of ejection fraction	7. IF a vulnerable elder has newly diagnosed heart failure, THEN left ventricular ejection fraction should be evaluated within 1 month.
Biochemical monitoring	8. IF a vulnerable elder is hospitalized with heart failure, THEN serum electrolytes and creatinine and blood urea nitrogen should be measured within 1 day of hospitalization.
β-Blocker use	9. IF a vulnerable elder has heart failure, left ventricular ejection fraction of 40% or less, and New York Heart Association class I to III disease, THEN a β-blocker should be offered unless the patient has a documented contraindication (for example, uncompensated heart failure).
Calcium-channel blocker use	10. IF a vulnerable elder has heart failure, left ventricular ejection fraction of 40% or less, and no atrial fibrillation, THEN from among the three generations of calcium-channel blocker medications, he or she should *not* be treated with a first- or second-generation calcium-channel blocker.
Antiarrhythmic agents	11. IF a vulnerable elder has heart failure and left ventricular ejection fraction of 40% or less, THEN he or she should not be treated with a type I antiarrhythmic agent unless an implantable cardioverter-defibrillator is in place.
Digoxin monitoring	12. IF a vulnerable elder with heart failure is treated with digoxin, THEN the digoxin level should be checked within 1 week if signs of toxicity develop.
Atrial fibrillation	13. IF a vulnerable elder has heart failure and atrial fibrillation, THEN anticoagulation should be offered to achieve an INR of 2.0 to 3.0.
	14. IF a vulnerable elder has heart failure and atrial fibrillation AND documented contraindications to anticoagulation, THEN aspirin should be offered.
Related indicators	Hospital follow-up: Continuity and coordination of care, QI 9 β-Blocker after myocardial infarction: Ischemic heart disease, QI 13 INR check for warfarin use: Medication use, QI 6 Electrolyte check for diuretic: Medication use, QI 7 Electrolyte and renal check after starting ACE inhibitor: Medication use, QI 12
Hospital care	
Admission evaluation	1. IF a vulnerable elder is admitted to the hospital for any acute or chronic illness or any surgical procedure, THEN the evaluation should include, within 24 hours, 1) diagnoses, 2) prehospital and current medications, and 3) cognitive status.
Discharge planning	2. IF a vulnerable elder enters the hospital, THEN discharge planning should begin within 48 hours.
Endocarditis prevention	3. IF a vulnerable elder has valvular or congenital heart disease, an intracardiac valvular prosthesis, hypertrophic cardiomyopathy, mitral valve prolapse with regurgitation, or a previous episode of endocarditis and a high-risk procedure is planned, THEN endocarditis prophylaxis should be given.

Continued on following page

Topic	Quality indicator
Deep venous thrombosis prevention	4. IF a hospitalized vulnerable elder is at very high risk for venous thrombosis, THEN the patient should have venous thromboembolism prophylaxis.
Stress ulcer prevention	5. IF a hospitalized vulnerable elder has risk factors for peptic stress ulcers, THEN the patient should receive prophylaxis with an H_2-blocker, sucralfate, or a proton-pump inhibitor.
Capacity for informed consent	6. IF a vulnerable elder is to have inpatient or outpatient elective surgery, THEN the medical record should document the patient's ability to understand risks, benefits, and consequences of the proposed surgical operation before the operative consent form is presented for signature.
Cardiac evaluation before vascular surgery	7. IF a vulnerable elder enters the hospital for nonemergent peripheral revascularization or aortic abdominal aneurysm repair, THEN a cardiac stress test should be performed if one was not performed in the previous year.
Fever evaluation	8. IF a hospitalized vulnerable elder has a new fever (body temperature > 38.5 °C [101.3 °F]), THEN there should be documentation that a physician examination was performed within 4 hours (or fever evaluation performed in the last 48 hours or an alternative explanation for the fever documented in the chart).
Delirium evaluation and treatment	9. IF a hospitalized vulnerable elder has a definite or suspected diagnosis of delirium, THEN an evaluation for potentially precipitating factors must be undertaken and identified causes treated.
Related indicators	Follow-up medications, tests and appointments after discharge: Continuity and coordination of care, QI 7–10 Medical record transfer between hospitals: Continuity and coordination of care, QI 11 Discharge summary in chart: Continuity and coordination of care, QI 12 Admission cognitive and functional assessments: Dementia, QI 1 Use of restraints: Dementia, QI 12–14 Advance directive and preference continuity: End-of-life care, QI 2–4, 6, 9 Mechanical ventilation: End-of-life care, QI 7, 10 Decision making participation: End-of-life care, QI 8 Palliative care: End-of-life care, QI 10–13 In-hospital death: End-of-life care, QI 14 Laboratory tests for hospitalized patients with heart failure: Heart failure, QI 8 Myocardial infarction treatment: Ischemic heart disease, QI 1–7, 12 Nutritional evaluation: Malnutrition, QI 5 Alimentation for patient who cannot eat: Malnutrition, QI 6, 8 Nutritional supplementation for malnourished hip fracture patient: Malnutrition, QI 7 Medication list in medical record: Medication use, QI 3 Avoid meperidine use: Medication use, QI 11 Preventive immunization: Pneumonia, QI 3 Pneumonia care: Pneumonia, QI 7–11 Pressure ulcer risk assessment, prevention, and treatment: Pressure ulcers, QI 1–11 Stroke treatment: Stroke, QI 5–10 Eye medications and glasses in the hospital: Vision care, QI 13, 15
Hypertension	
Electrocardiography for new hypertension	1. IF a vulnerable elder has newly diagnosed hypertension, THEN electrocardiography should be performed within 4 weeks of the diagnosis.
Cardiovascular risk documentation	2. IF a vulnerable elder is newly diagnosed with hypertension, THEN there should be documentation regarding the presence or absence of other cardiovascular risk factors.
Ascertaining the hypertension diagnosis	3. IF a vulnerable elder is diagnosed with hypertension and has a blood pressure below 170/90 mm Hg, THEN there should be evidence that three or more blood pressure measurements of 140/90 mm Hg or greater were obtained before diagnosis.
Nonpharmacologic management	4. IF a vulnerable elder is diagnosed with hypertension, THEN nonpharmacologic therapy with lifestyle modification for treatment of hypertension should be recommended, including 1) dietary sodium restriction and 2) weight loss if the patient is more than 10% over ideal body weight.
Pharmacologic management	5. IF a vulnerable elder remains hypertensive after nonpharmacologic intervention, THEN pharmacologic antihypertensive treatment should be initiated.
	6. IF a vulnerable elder requires pharmacotherapy for treatment of hypertension in the outpatient setting, THEN a once- or twice-daily medication should be used unless there is documentation regarding the need for agents that require more frequent dosing.
	7. IF a vulnerable elder has hypertension and has renal parenchymal disease with a serum creatinine concentration greater than 1.5 mg/dL or more than 1 g of protein/24 h of collected urine, THEN therapy with an ACE inhibitor should be offered.

Continued on following page

	8. IF a vulnerable elder has hypertension and asthma, THEN β-blocker therapy for hypertension should not be used.
Related indicators	Check blood pressure at each outpatient visit for patients with diabetes: Diabetes mellitus, QI 5 Control blood pressure for patients with diabetes: Diabetes mellitus, QI 7 Orthostatic blood pressure check for fall: Falls, QI 3 Education for initiation of new medication: Medication use, QI 2 Follow-up on therapeutic effect of new medication: Medication use, QI 4 Electrolyte check for diuretics: Medication use, QI 7 Electrolyte and renal check after starting ACE inhibitor: Medication use, QI 12
Ischemic heart disease	
Assess left ventricular function	1. IF a vulnerable elder is hospitalized with an acute myocardial infraction, THEN he or she should be offered assessment of left ventricular function before discharge or within 3 days after hospital discharge.
Noninvasive stress testing	2. IF a vulnerable elder has an acute myocardial infarction or unstable angina, did not undergo angiography, and does not have contraindications to revascularization, THEN he or she should be offered noninvasive stress testing 4 to 21 days after the infarction or anginal event.
Early aspirin therapy	3. IF a vulnerable elder has an acute myocardial infarction or unstable angina, THEN he or she should be given aspirin therapy within 1 hour of presentation.
Early β-blocker therapy	4. IF a vulnerable elder has unstable angina or an acute myocardial infarction, THEN he or she should be offered β-blocker therapy within 12 hours of presentation.
Reperfusion therapy	5. IF a vulnerable elder has an acute myocardial infarction that is measurable by electrocardiography and does not have contraindications to reperfusion therapy, THEN he or she should be offered treatment with reperfusion therapy.
Early coronary catheterization	6. IF a vulnerable elder without contraindications to revascularization has an acute myocardial infarction or unstable angina with one or more of the following: pain refractory to medical therapy (over 1 hour of aggressive medical therapy), recurrent angina or ischemia at rest or with low-level activities, ischemia accompanied by symptoms of heart failure, THEN he or she should be offered urgent catheterization.
Coronary artery bypass surgery	7. IF a vulnerable elder has significant left main or significant three-vessel coronary artery disease with left ventricular ejection fraction less than 50%, THEN he or she should be offered coronary artery bypass graft surgery.
Cholesterol evaluation	8. IF a vulnerable elder has established coronary heart disease and his or her cholesterol level is not known, THEN he or she should undergo a fasting cholesterol evaluation including total, LDL, and HDL cholesterol levels.
Cholesterol-lowering medication	9. IF a vulnerable elder has established coronary heart disease and an LDL cholesterol level greater than 130 mg/dL and a trial of step II diet therapy was not offered or was ineffective, THEN he or she should be offered cholesterol-lowering medication.
Antiplatelet therapy	10. IF a vulnerable elder has established coronary heart disease and is not receiving warfarin, THEN he or she should be offered antiplatelet therapy.
Smoking cessation	11. IF a vulnerable elder with established coronary heart disease smokes, THEN he or she should be offered counseling for smoking cessation at least annually and have this offer documented in the medical record.
Coronary rehabilitation	12. IF a vulnerable elder has had a recent myocardial infarction or recent coronary bypass graft surgery, THEN he or she should be offered cardiac rehabilitation.
β-blocker therapy	13. IF a vulnerable elder has had an acute myocardial infarction, THEN he or she should be offered a β-blocker.
Related indicators	Hospital follow-up: Continuity and coordination of care, QI 10 Evaluate patients after myocardial infarction for depression: Depression, QI 2 Electrocardiogram before tricyclic antidepressant in patient with cardiac disease: Depression, QI 10 Daily aspirin for patient with diabetes: Diabetes mellitus, QI 8 Treat hypercholesterolemia in patient with diabetes: Diabetes mellitus, QI 9 Document history of coronary artery disease for patient with new heart failure: Heart failure, QI 3 Cardiac evaluation before vascular procedure: Hospital care, QI 7 Document cardiovascular risk factors for new hypertension: Hypertension, QI 2 Follow-up on therapeutic effect of new medication: Medication use, QI 4
Malnutrition	
Weight measurement	1. ALL community-dwelling vulnerable elders should be weighed at each physician office visit and these weights should be documented in the medical record.

Continued on following page

Document weight loss	2. IF a vulnerable elder has involuntary weight loss of greater than or equal to 10% of body weight over 1 year or less, THEN weight loss (or a related disorder) should be documented in the medical record as an indication that the physician recognized malnutrition as a potential problem.
Evaluate weight loss and hypoalbuminemia	3. IF a community-dwelling vulnerable elder has documented involuntary weight loss of hypoalbuminemia (<3.5 g/dL), THEN she or he should receive an evaluation for potentially reversible causes of poor nutritional intake.
Evaluate comorbid conditions	4. IF a community-dwelling vulnerable elder has documented involuntary weight loss or hypoalbuminemia (<3.5 g/dL), THEN he or she should receive an evaluation for potentially relevant comorbid conditions, including medications that might be associated with decreased appetite (for example, digoxin, fluoxetine, anticholinergics), depressive symptoms, and cognitive impairment.
Document nutritional status of inpatient	5. IF a vulnerable elder is hospitalized, THEN his or her nutritional status should be documented during the hospitalization by evaluation of oral intake or serum biochemical testing (for example, albumin, prealbumin, or cholesterol).
Alternative alimentation	6. IF a hospitalized vulnerable elder is unable to take foods orally for more than 72 hours, THEN alternative alimentation (for example, enteral or parenteral) should be offered.
Supplement patients with hip fracture	7. IF a vulnerable elder who was hospitalized for a hip fracture has evidence of nutritional deficiency (thin body habitus or lower serum albumin or prealbumin level), THEN oral or enteral nutritional protein-energy supplementation should be initiated postoperatively.
Gastrostomy feeding in patients with stroke	8. IF a vulnerable elder with stroke has persistent dysphagia at 14 days, THEN a gastrostomy or jejunostomy tube should be considered for enteral feeding.
Related indicators	Evaluate patients with weight loss for depression: Depression, QI 1 Nutritional intervention for patient at pressure ulcer risk: Pressure ulcers, QI 3 Evaluate nutritional status at initial examination: Preventive care, QI 1, 2
Medication use	
Drug indication	1. IF a vulnerable elder is prescribed a new drug, THEN the prescribed drug should have a clearly defined indication documented in the record.
Patient education	2. IF a vulnerable elder is prescribed a new drug, THEN the patient (or, if incapable, a caregiver) should receive education about the purpose of the drug, how to take it, and the expected side effects or important adverse reactions.
Medication list	3. For ALL vulnerable elders the outpatient medical record of every physician and the hospital medical record should contain an up-to-date medication list.
Response to therapy	4. EVERY new drug that is prescribed to a vulnerable elder on an ongoing basis for a chronic medical condition should have a documentation of the response to therapy within 6 months.
Periodic drug regimen review	5. ALL vulnerable elders should have a drug regimen review at least annually.
Monitoring of warfarin therapy	6. IF a vulnerable elder is prescribed warfarin, THEN an INR should be determined within 4 days after initiation of therapy and at least every 6 weeks.
Monitoring of diuretic therapy	7. IF a vulnerable elder is prescribed a thiazide or loop diuretic, THEN he or she should have electrolytes checked within 1 week of initiating therapy or at least yearly.
Oral hypoglycemic medication	8. IF a vulnerable elder is prescribed an oral hypoglycemia drug, THEN chlorpropamide should not be used.
Anticholinergic medications	9. ALL vulnerable elders should not be prescribed a medication with strong anticholinergic effects if alternatives are available.
Barbiturates	10. IF a vulnerable elder does not need control of seizures, THEN barbiturates should not be used.
Opioid analgesic	11. IF a vulnerable elder requires analgesia, THEN meperidine should not be used.
New ACE inhibitor	12. IF a vulnerable elder begins receiving an ACE inhibitor, THEN serum potassium and creatinine levels should be checked within 1 week of initiation of therapy.
Related indicators	Medication follow-up: Continuity and coordination of care, QI 2 Continuity between providers: Continuity and coordination of care, QI 3 Continuity after hospital discharge: Continuity and coordination of care, QI 7 Causing cognitive impairment: Dementia, QI 2, 3 Choice of antidepressant medication: Depression, QI 7 Electrocardiography before tricyclic antidepressant in patient with cardiac disease: Depression, QI 10 MAOI interactions: Depression, QI 11, 12

Continued on following page

	Dosing and titration of antidepressants: Depression, QI 14 Calcium-channel blocker use in heart failure: Heart failure, QI 10 Antiarrhythmic use in heart failure: Heart failure, QI 11 INR of 2 to 3 for atrial fibrillation in heart failure: Heart failure, QI 13 Evaluate medications on hospital admission: Hospital care, QI 1 Assess medications if delirium present: Hospital care, QI 9 Long-acting medications for hypertension: Hypertension, QI 6 Evaluate medications if patient presents with weight loss: Malnutrition, QI 4 Acetaminophen use for osteoarthritis: Osteoarthritis, QI 7, 8 Calcium and vitamin D if taking steroids: Osteoporosis, QI 7 Bowel regimen for opioid use: Pain management, QI 5 Follow up therapeutic effect of pain treatment: Pain management, QI 7 NSAID use: Osteoarthritis, QI 9, 10; Pain management, QI 4 Evaluate medications at initial examination: Preventive care, QI 1, 2
Osteoarthritis	
Assessment of pain and functional status	1. IF a vulnerable elder is diagnosed with symptomatic osteoarthritis, THEN his or her functional status and the degree of pain should be assessed annually.
Aspiration of hot joints	2. IF a vulnerable elder has monoarticular joint pain associated with redness, warmth, or swelling AND the patient also has an oral temperature greater than 38.0 °C and does not have a previously established diagnosis of pseudogout or gout, THEN a diagnostic aspiration of the painfully swollen red joint should be performed that day.
Exercise therapy	3. IF an ambulatory vulnerable elder is newly diagnosed with osteoarthritis of the knee, has no contraindication to exercise, and is physically and mentally able to exercise, THEN a directed or supervised strengthening or aerobic exercise program should be prescribed within 3 months of diagnosis.
	4. IF an ambulatory vulnerable elder has had a diagnosis of symptomatic osteoarthritis of the knee for longer than 12 months, has no contraindication to exercise, and is physically and mentally able to exercise, THEN there should be evidence that a directed or supervised strengthening or aerobic exercise program was prescribed at least once since the time of diagnosis.
Patient education	5. IF an ambulatory vulnerable elder is diagnosed with symptomatic osteoarthritis THEN education regarding the natural history, treatment, and self-management of the disease should be offered at least once within 6 months of diagnosis.
	6. IF an ambulatory vulnerable elder has had a diagnosis of symptomatic osteoarthritis for 12 months or longer THEN there should be evidence that the patient was offered education regarding the natural history, treatment, and self-management of the disease at least once since the time of diagnosis.
First-line pharmacologic therapy	7. IF oral pharmacologic therapy is initiated to treat osteoarthritis in a vulnerable elder, THEN acetaminophen should be the first drug used, unless there is a documented contraindication to use.
	8. IF oral pharmacologic therapy for osteoarthritis in a vulnerable elder is changed from acetaminophen to a different oral agent, THEN there should be evidence that the patient has had a trial of maximum-dose acetaminophen (suitable for age and comorbid conditions).
NSAIDs	9. IF a patient is treated with a COX nonselective NSAID, THEN there should be evidence that the patient was advised of the risk for gastrointestinal bleeding associated with these drugs.
	10. IF a vulnerable elder is older than 75 years of age, is treated with warfarin, or has a history of peptic ulcer disease or gastrointestinal bleeding, AND is being treated with a COX nonselective NSAID, THEN he or she should be offered concomitant treatment with either misoprostol or a proton-pump inhibitor.
Total joint replacement	11. IF a vulnerable elder with severe symptomatic osteoarthritis of the knee or hip has failed to respond to nonpharmacologic and pharmacologic therapy and has no contraindication to surgery, THEN the patient should be referred to an orthopedic surgeon to be evaluated for total joint replacement within 6 months unless a contraindication to surgery is documented.
Related indicators	NSAID use: Pain management, QI 4 Follow-up treatment of chronic pain: Pain management, QI 7
Osteoporosis	
Prevention	1. ALL female vulnerable elders should be counseled at least once regarding intake of dietary calcium and vitamin D and weight-bearing exercises.
Smoking cessation	2. ALL female vulnerable elders who smoke should be counseled annually about smoking cessation.
Estrogen replacement therapy	3. ALL female vulnerable elders should be counseled about estrogen replacement therapy at least once.
Identifying secondary osteoporosis	4. IF a vulnerable elder has a new diagnosis of osteoporosis, THEN during the initial evaluation period, an underlying cause of osteoporosis should be sought by checking medication use and current alcohol use.

Continued on following page

Exercise therapy for new fracture	5. IF an ambulatory vulnerable elder has an osteoporotic fracture diagnosed, THEN physical therapy or an exercise program should be offered within 3 months.
Calcium and vitamin D for osteoporosis	6. IF a vulnerable elder has osteoporosis, THEN use of calcium and vitamin D supplements should be recommended at least once.
Calcium and vitamin D with corticosteroid use	7. IF a vulnerable elder is taking corticosteroids for more than 1 month, THEN the patient should be offered calcium and vitamin D.
Treatment of osteoporosis	8. IF a female vulnerable elder is newly diagnosed with osteoporosis, THEN the patient should be offered treatment with HRT or bisphosphonates or calcitonin within 3 months of diagnosis.
Testosterone therapy for male osteoporosis	9. IF a male vulnerable elder has osteoporosis and is hypogonadal, THEN he should be offered testosterone treatment.
Related indicators	Evaluate for falls or gait imbalance: Falls, QI 1, 2 Alcohol screening: Screening and prevention, QI 3 Smoking history and counseling: Screening and prevention, QI 4, 5 Exercise counseling: Preventive care, QI 6
Pain management	
Screening for pain	1. ALL vulnerable elders should be screened for chronic pain during the initial evaluation period.
	2. ALL vulnerable elders should be screened for chronic pain every 2 years.
Targeted history and physical examination	3. IF a vulnerable elder has a newly reported chronic painful condition, THEN a targeted history and physical examination should be initiated within 1 month.
Addressing risks of NSAIDs	4. IF a vulnerable elder has been prescribed a cyclooxygenase nonselective NSAID for the treatment of chronic pain, THEN the medical record should indicate whether he or she has a history of peptic ulcer disease and, if a history is present, justification of NSAID use should be documented.
Constipation with opioid use	5. IF a vulnerable elder with chronic pain is treated with opioids, THEN he or she should be offered a bowel regimen, or the medical record should document the potential for constipation or explain why bowel treatment is not needed.
Treating pain	6. IF a vulnerable elder has a newly reported chronic painful condition, THEN treatment should be offered.
Reassessment of pain control	7. IF a vulnerable elder is treated for a chronic painful condition, THEN he or she should be assessed for a response within 6 months.
Related indicators	Evaluate depression in patients with chronic pain: Depression, QI 2 Palliative care: End-of-life care, QI 12 Educate concerning side effects of new medication: Medication use, QI 2 Avoid meperidine: Medication use, QI 11 Assess pain and function annually for osteoarthritis: Osteoarthritis, QI 1 Acetaminophen use for osteoarthritis: Osteoarthritis, QI 7, 8 NSAID use: Osteoarthritis, QI 9, 10
Pneumonia	
Pneumococcal vaccination	1. IF a vulnerable elder with no history of allergy to the pneumococcal vaccine is not known to have already received a pneumococcal vaccine or if the patient received it more than 5 years ago (if before age 65 years), THEN a pneumococcal vaccine should be offered.
Influenza vaccination	2. IF a vulnerable elder has no history of anaphylactic hypersensitivity to eggs or to other components of the influenza vaccine, THEN the patient should be offered an annual influenza vaccination.
Vaccination of inpatients	3. IF a vulnerable elder is hospitalized and he or she is eligible for vaccination (that is, is not up-to-date with pneumococcal or influenza vaccination), THEN the patient should be offered vaccination against pneumococcus and influenza (during flu season).
Vaccination rates	4. IF pneumococcal or influenza vaccination rates among patients of a health delivery organization are low (<60% of persons at risk for pneumococcal and influenza disease and <90% of institutionalized elderly), THEN methods to increase the rate of vaccination should be used.
Vaccination of health care workers	5. IF a health care organization cares for vulnerable elders, THEN it should have a formal plan to offer and encourage influenza vaccination among its employees.
Smoking cessation	6. IF a vulnerable elder smoker develops pneumonia, THEN the smoker should be advised to quite smoking.
Antibiotics	7. IF a vulnerable elder is admitted to the hospital with pneumonia, THEN antibiotics should be administered within 8 hours of hospital arrival.
Oxygen therapy	8. IF a vulnerable elder is admitted to the hospital with community-acquired pneumonia with hypoxia, THEN the patient should receive oxygen therapy.

Continued on following page

Empyema	9. IF a vulnerable elder has an empyema, THEN drainage is required.
Changing parenteral to oral antibiotics	10. IF a vulnerable elder with community-acquired pneumonia is to be switched from parenteral to oral antimicrobial therapy, THEN the patient must meet all of the following criteria: a clinically improving condition, hemodynamic stability, and tolerance of oral medication or food and fluids.
Stability at discharge	11. IF a vulnerable elder with community-acquired pneumonia is to be discharged home, THEN the patient should not be unstable on the day before or the day of discharge.
Related indicators	Hospital follow-up: Continuity and coordination of care, QI 10 Mechanical ventilator: End-of-life care, QI 7, 10
Pressure ulcers	
Risk assessment	1. IF a vulnerable elder is admitted to an intensive care unit or a medical or surgical unit of a hospital and cannot reposition himself or herself or has limited ability to do so, THEN risk assessment for pressure ulcers should be done on admission.
Preventive intervention	2. IF a vulnerable elder is identified as at risk for pressure ulcer development or a pressure ulcer risk assessment score indicates that the person is at risk, THEN a preventive intervention addressing repositioning needs and pressure reduction (or management of tissue loads) must be instituted within 12 hours.
Nutritional intervention	3. IF a vulnerable elder is identified as at risk for pressure ulcer development and has malnutrition (involuntary weight loss of $\geq$10% over 1 year or low albumin or prealbumin levels), THEN nutritional intervention or dietary consultation should be instituted.
Evaluation	4. IF a vulnerable elder presents with a pressure ulcer, THEN the pressure ulcer should be assessed for location, depth and stage, size, and presence of necrotic tissue.
Management	5. IF a vulnerable elder presents with a clean full-thickness pressure ulcer and has no improvement after 4 weeks of treatment, THEN the appropriateness of the treatment plan and the presence of cellulitis or osteomyelitis should be assessed.
	6. IF a vulnerable elder presents with a partial-thickness pressure ulcer and has no improvement after 2 weeks of treatment, THEN the appropriateness of the treatment plan should be assessed.
Debridement	7. IF a vulnerable elder presents with a full-thickness sacral or trochanteric pressure ulcer covered with necrotic debris or eschar, THEN debridement by using sharp, mechanical, enzymatic, or autolytic procedures should be done within 3 days of diagnosis.
Cleansing	8. IF a vulnerable elder has a stage 2 or greater pressure ulcer, THEN a topical antiseptic should not be used on the wound.
Systemic infection	9. IF a vulnerable elder with a full-thickness pressure ulcer presents with systemic signs and symptoms of infection, such as elevated temperature, leukocytosis, confusion, and agitation, and these signs and symptoms do not have another identified cause, THEN the ulcer should be debrided of necrotic tissue within 12 hours.
	10. IF a vulnerable elder with a full-thickness pressure ulcer presents with systemic signs and symptoms of infection, such as elevated temperature, leukocytosis, confusion, and agitation, and these signs and symptoms do not have another identified cause, THEN a tissue biopsy or needle aspiration sample should be obtained and sent for culture and sensitivity testing within 12 hours.
Topical dressings	11. IF a vulnerable elder presents with a clean full-thickness or a partial-thickness pressure ulcer, THEN a moist wound-healing environment should be provided with topical dressings.
Preventive care	
Geriatric evaluation	1. ALL vulnerable elders newly admitted to a physician practice should receive, within 6 months, the elements of a comprehensive geriatric assessment.
Geriatric evaluation follow-up	2. IF the elements of a comprehensive geriatric assessment are performed, THEN follow-up should assure the implementation of recommendations.
Alcohol screening	3. ALL vulnerable elders should be screened at least once to detect problem drinking and hazardous drinking by taking a history of alcohol use or by using standardized screening questionnaires (for example, CAGE, AUDIT).
Tobacco screening and counseling	4. ALL vulnerable elders should receive screening for tobacco use and nicotine dependence.
	5. IF a vulnerable elder uses tobacco regularly, THEN he or she should be offered counseling and/or pharmacologic therapy at least once to stop tobacco use.
Physical activity screening	6. ALL vulnerable elders should receive an assessment of their activity level and be provided with counseling at least once to promote regular physical activity.

Continued on following page

Colorectal cancer screening	7. ALL vulnerable elders should be offered screening for colorectal cancer at least once with fecal occult blood testing or should have had sigmoidoscopy in the last 5 years or colonoscopy in the last 10 years.
Breast cancer screening	8. IF a vulnerable elderly woman is younger than age 70 years, THEN she should be offered mammographic screening for breast cancer every 2 years.
Related indicators	Cognitive and functional evaluation: Dementia, QI 1 Advance directives: End-of-life care, QI 1 Screen for falls and imbalance: Falls, QI 1, 2 Hearing screening: Hearing loss, QI 1 Cognitive evaluation at hospital admission: Hospital care, QI 1 Smoking screen and counsel: Ischemic heart disease, QI 11; Osteoporosis, QI 2; Pneumonia, QI 6; Stroke, QI 8 Weigh patient each outpatient visit: Malnutrition, QI 1 Calcium, vitamin D, and exercise counseling: Osteoporosis, QI 1 Screen for pain: Pain management, QI 1, 2 Pneumococcal vaccine: Pneumonia, QI 1, 3, 4 Influenza vaccine: Pneumonia, QI 2–5 Urinary incontinence screening: Urinary incontinence, QI 1, 2, Vision evaluation: Vision care, QI 1
Stroke and atrial fibrillation	
Carotid endarterectomy	1. IF a male vulnerable elder has carotid artery symptoms, and is diagnosed with a transient ischemic attack or nondisabling stroke, and has had carotid imaging documenting greater than 70% carotid stenosis on the side ipsilateral to the hemisphere producing the symptoms, and the medical record does not document that no facility is available with less than 6% 30-day morbidity and mortality, THEN he should receive referral for evaluation for carotid endarterectomy within 4 weeks of the diagnostic study or event, whichever is later.
Carotid artery imaging	2. IF a male vulnerable elder has carotid artery symptoms and is diagnosed with transient ischemic attack or nondisabling stroke, and the medical record does not document that the patient is not a candidate for carotid surgery, THEN a carotid artery imaging study should be performed within 4 weeks.
Contraindication	3. IF for a vulnerable elder the combined risk of surgery (patient characteristics and hospital or surgeon experience) is 10% or greater, THEN carotid endarterectomy should not be performed.
Anticoagulation for atrial fibrillation	4. IF a vulnerable elder has atrial fibrillation for more than 48 hours' duration and has any "high-risk" condition: impaired left ventricular function; female older than 75 years of age; hypertension or systolic blood pressure greater than 160 mm Hg; or prior ischemic stroke, transient ischemic attack, or systemic embolism, THEN he or she should be offered oral anticoagulant therapy, or antiplatelet therapy if the medical record documents a reason not to give anticoagulant therapy.
Stroke imaging before anticoagulation	5. IF a vulnerable elder has a presumed stroke, THEN a CT or MRI of the head should be obtained before initiation or continuation of thrombolytic treatment, anticoagulant therapy, or antiplatelet therapy.
Monitoring warfarin therapy	6. IF a vulnerable elder is taking warfarin for atrial fibrillation, THEN an INR should be checked within 4 days of the first dose and at least every 6 weeks.
Antiplatelet therapy for acute stroke	7. IF a vulnerable elder is diagnosed with acute atherothrombotic ischemic stroke or with a transient ischemic attack, THEN antiplatelet treatment should be offered within 48 hours following the stroke or transient ischemic attack, unless the patient is already receiving anticoagulant treatment.
Smoking cessation	8. IF a vulnerable elder has a transient ischemic attack or stroke, THEN the medical record should document that smoking status was assessed, and that smokers were counseled to stop smoking.
Thrombolytic therapy	9. IF a vulnerable elder is started on thrombolytic therapy for a stroke, THEN all of the following should be true: a head CT or MRI should precede initiation of thrombolytic therapy; sulcal effacement, mass effect, edema, or possible hemorrhage should not be present on neuroimaging; time from symptom onset to initiation of thrombolytic therapy should be documented in the medical record and should not exceed 3 hours; absence of absolute contraindications to thrombolysis should be documented in the medical record; tissue plasminogen activator should be used; and National Institute of Neurological Disorders and Stroke exclusion criteria should not be present.
Admission to stroke unit	10. IF a vulnerable elder is admitted to the hospital with a diagnosis of acute ischemic or hemorrhagic stroke, THEN he or she should be admitted to a specialized acute or combined acute and rehabilitative stroke unit, or transferred to a specialized stroke unit if such a unit is available in the hospital.
Related indicators	Treat cerebrovascular disease in patients with dementia: Dementia, QI 8 Evaluate patients with stroke for depression: Depression, QI 2 Aspirin for diabetic patients: Diabetes mellitus, QI 8 Anticoagulation or aspirin for heart failure and atrial fibrillation: Heart failure, QI 13, 14 Follow INR for warfarin every 6 weeks: Medication use, QI 6 Feeding for persistent dysphagia after stroke: Malnutrition, QI 8

Continued on following page

Urinary incontinence	
Initial evaluation	1. ALL vulnerable elders should have documentation of the presence or absence of urinary incontinence during the initial evaluation.
Annual evaluation	2. ALL vulnerable elders should have annual documentation of the presence or absence of urinary incontinence.
Targeted history	3. IF a vulnerable elder has new urinary incontinence that persists for more than 1 month or urinary incontinence at the time of a new evaluation, THEN a targeted history should be obtained that documents each of the following: 1) characteristics of voiding, 2) ability to get to the toilet, 3) previous treatment for urinary incontinence, 4) importance of the problem to the patient, and 5) mental status.
Targeted physical examination	4. IF a vulnerable elder has new urinary incontinence that persists for more than 1 month or urinary incontinence at the time of a new evaluation, THEN a targeted physical examination should be performed that documents 1) a rectal examination and 2) a genital system examination (including a pelvic examination for women).
Diagnostic tests	5. IF a vulnerable elder has new urinary incontinence that persists for more than 1 month or urinary incontinence at the time of a new evaluation, THEN a dipstick urinalysis and post-void residual should be obtained.
Discussion of treatment options	6. IF a vulnerable elder has new urinary incontinence or urinary incontinence at the time of a new evaluation, THEN treatment options should be discussed.
Behavioral therapy	7. IF a cognitively intact vulnerable elder who is capable of independent toileting has documented stress, urge, or mixed incontinence without evidence of hematuria or high post-void residual, THEN behavioral treatment should be offered.
Urodynamic testing	8. IF a vulnerable elder undergoes surgery or periurethral injections for urinary incontinence, THEN subtracted cystometry should be performed before the procedure.
Surgery for stress incontinence	9. IF a female vulnerable elder has documented stress urinary incontinence caused by isolated intrinsic sphincter deficiency or intrinsic sphincter deficiency with coexistent hypermobility, and she undergoes surgical correction, THEN a sling or artificial sphincter procedure should be used.
Catheter use	10. IF a vulnerable elder has clinically significant newly discovered overflow urinary incontinence and indwelling urethral catheterization is used, THEN there should be documentation that the patient is not a candidate for alternative interventions as a result of severe physical or mental impairments or does not want alternative interventions.
Vision care	
Comprehensive eye examination	1. ALL vulnerable elders should be offered an eye evaluation every 2 years that includes the essential components of a comprehensive eye examination.
Urgent signs and symptoms	2. IF a vulnerable elder has sudden-onset visual changes, eye pain, corneal opacity, or severe purulent discharge, THEN the patient should be examined within 72 hours by an ophthalmologist.
Chronic signs and symptoms	3. IF a vulnerable elder develops progression of a chronic visual deficit that now interferes with his or her ability to carry out needed or desired activities, THEN he or she should have an ophthalmic examination by a person skilled at ophthalmic examination within 2 months.
Function evaluation for cataract	4. IF a vulnerable elder is diagnosed with a cataract, THEN assessment of visual function with respect to his or her ability to carry out needed or desired activities should be performed every 12 months.
Macular degeneration evaluation	5. IF a vulnerable elder with age-related macular degeneration has a new-onset change in vision, THEN he or she should have a dilated retinal examination of the affected eye within 3 days.
Initial glaucoma evaluation	6. IF a vulnerable elder has a new diagnosis of primary open-angle glaucoma, THEN the initial evaluation of each eye should include the essential components of a comprehensive eye examination AND documentation of the optic nerve appearance, visual field testing, and determination of an initial target pressure.
Diabetic retinopathy	7. IF a vulnerable elder with diabetes has a retinal examination, THEN the presence and/or degree of diabetic retinopathy should be documented.
	8. IF a vulnerable elder has proliferative diabetic retinopathy, THEN a dilated eye examination should be performed at least every 4 months.
Macular edema	9. IF a vulnerable elder with diabetes is diagnosed with macular edema, THEN a dilated eye examination should be performed at least every 6 months.
Cataract extraction	10. IF a vulnerable elder is diagnosed with a cataract that limits the patient's ability to carry out needed or desired activities, THEN cataract extraction should be offered.
Cataract surgery follow-up	11. IF a vulnerable elder undergoes cataract surgery, THEN a follow-up ocular examination should occur within 48 hours and re-examination should occur within 3 months.
Glaucoma follow-up	12. IF a vulnerable elder with glaucoma experiences progressive optic nerve damage on visual field tests or optic nerve examination, THEN treatment should be reassessed or advanced at least every 3 months until the intraocular pressure is lowered by at least 20% or there is documentation that the vision loss has stabilized.

Continued on following page

Continuity of ocular therapy	13. IF a vulnerable elder who has been prescribed an ocular therapeutic regimen becomes hospitalized, THEN the regimen should be administered in the hospital unless discontinued by an ophthalmologic consultant.
Refraction correction	14. IF a vulnerable elder with functional visual deficits has subjective improvement on refraction, THEN he or she should receive a primary or updated prescription for corrective lenses.
Inpatient access to corrective lenses	15. IF a vulnerable elder who uses corrective lenses for any activities of daily living is hospitalized (or in a nursing home) and his or her corrective lenses are at the hospital (or nursing home), THEN the corrective lenses should be readily accessible to the vulnerable elder.
Related indicators	Annual dilated eye examination for patient with diabetes: Diabetes mellitus, QI 10 Evaluate vision at initial examination: Preventive care, QI 1, 2

* ACE = angiotensin-converting enzyme; ACOVE = Assessing Care of Vulnerable Elders; AUDIT = Alcohol Use Disorders Identification Test; CAGE = Have you ever felt you should Cut down on your drinking; have people Annoyed you by criticizing your drinking; have you ever felt Guilty about your drinking; have you ever taken an Eye-opener?; CT = computed tomography; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition; HDL = high-density lipoprotein; INR = international normalized ratio; LDL = low-density lipoprotein; MAOI = monoamine oxidase inhibitor; MRI = magnetic resonance imaging; NSAID = nonsteroidal anti-inflammatory drug; QI = quality indicator.