

Quality of Care Provided in a Special Needs Plan Using a Nurse Care Manager Model

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OBJECTIVES: To comprehensively evaluate the quality of care provided in special needs plans (SNPs; Medicare Advantage plans that aim to provide specialized care for complex older adults) and specifically the nurse care management model in the community setting.

DESIGN: We adapted 107 process-of-care quality measures across 12 conditions from the Assessing Care of Vulnerable Elders set to obtain a clinically detailed evaluation of the quality of care received by complex older enrollees in a dual eligible Evercare SNP. We abstracted 13 months of primary care medical records to delineate quality of care provided by physicians and whether there was value added from the nurse care manager model.

SETTING: Dual eligible Evercare SNP located in central Florida.

PARTICIPANTS: Two-hundred thirty-one vulnerable older enrollees in the SNP who had complex disease.

RESULTS: Based on physician medical records alone, the 231 high-risk participants (mean age 77, 67% women) received recommended care for 53% of 5,569 evaluated clinical circumstances, ranging from 12% for end-of-life care to 78% for diabetes mellitus. In fewer than 40% of these clinical circumstances was recommended care provided for dementia, falls, and urinary incontinence. In a second analysis accounting for care provided by both the Evercare nurse and the physician, recommended care was provided to patients in 69% of the 5,684 evaluated clinical circumstances.

CONCLUSION: Comprehensive quality measurement applied to vulnerable older adults enrolled in one mature SNP showed that the Evercare nurse model addresses

important deficits in physician care for geriatric conditions. Such measurement should be applied to other SNP models and to compare SNP care with that for complex, older, fee-for-service Medicare cohorts. *J Am Geriatr Soc* 59:1810–1822, 2011.

Key words: special needs plan; quality of care; vulnerable elders; nurse care manager

Special needs plans (SNPs) were developed to provide specialized care for complex older adults who would benefit from greater coordination of care. This unique category of Medicare Advantage plan, created by the Medicare Modernization Act of 2003, was designed to attract and enroll Medicare beneficiaries who fall into certain special needs demographics: institutionalized individuals, dually eligible Medicare beneficiaries, and persons who have severe or disabling chronic conditions.¹ According to the Centers for Medicare and Medicaid Services (CMS), SNPs should provide better care coordination and a higher quality of care for their vulnerable enrollees, and these plans should focus on monitoring health status, managing chronic diseases, and avoiding inappropriate hospitalizations.¹ The formation of these plans is also aimed to control costs for treating high-risk, high-cost Medicare beneficiaries.² SNPs have grown dramatically since their inception. Despite their rapid growth, there has been no comprehensive evaluation of the care provided in these plans to determine whether care that SNPs provide is “special.”³

The legislation initiating SNPs included the goal of “consistent, comparable measures that reflect the service delivery and outcomes important to these populations” to evaluate the care provided in SNP plans and to drive improvement.¹ This is particularly important because prior evaluations of the care provided to older, vulnerable adults demonstrated that this cohort received only 50% to 60% of recommended care processes⁴ and considerably worse

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care for conditions of aging such as falls, cognitive impairment, and urinary incontinence.^{4,5} Quality of care is a particular concern for dual eligible Medicare beneficiaries,⁶ and this group is expensive to care for.⁷ Measurement of quality of care is particularly challenging for this group of people because currently available measures based on administrative data are not well suited to vulnerable older persons,⁸ and survey-based measures have not been applied to this sample.² CMS and the National Committee for Quality Assurance have initiated an evaluation plan that focuses on describing the structural aspects of SNP care and measuring elements of process of care.^{9,10}

To develop the capability to perform a clinically detailed evaluation of care provided to SNP enrollees, Evercare and RAND collaborated to adapt measures from the Assessing Care of Vulnerable Elders (ACOVE) set. The measures aimed to capture the care that primary care clinicians provide to patients and to identify care that the Evercare model provides. This measurement was applied to the most complex group of patients in one dual-eligible Evercare SNP to test the feasibility of comprehensively measuring process of care for SNP enrollees in a way that targets the sorts of individuals at whom these plans are aimed and to characterize the care provided in a relatively mature dual-eligible plan.

METHODS

The aim of this project was to adapt process-of-care quality measures from the ACOVE measurement set to apply to SNP enrollees to obtain a clinically detailed evaluation of the quality of care received. This set of measures was applied to the most vulnerable individuals enrolled in a mature Evercare SNP. The RAND institutional review board approved the project.

Study SNP and Sample

A dual-eligible Evercare SNP located in central Florida with more than 10,000 enrollees was selected because it had been in existence since 2005 and had a large group of vulnerable enrollees. The Evercare SNP model evolved from a nurse care management program in which nurse practitioners provide frontline continuity care for institutionalized individuals and use algorithm-driven methods to ensure best practices.¹¹ In the SNP application of the Evercare model to the community, Evercare nurses (registered or advance practice nurses) interact with vulnerable individuals directly during home visits and in telephone visits to develop and manage personalized care plans; offer preventive services; support caregivers; coordinate services; facilitate communication between physicians, institutions, patients, and their families; deliver advance care planning to align care with patient goals; and provide palliative services. These nurses are not integrated within the physician practices, and reports of their visits and contacts are not routinely available to physicians, although nurses may contact physicians with clinical findings if needed or the patient desires. Data collection instruments and care management plans that are contained in a specialized software platform guide Evercare nurse activities. Prescribed activities in this platform were not related to the quality

measures, and nurses were unaware of the measures being evaluated. Data from this platform form an Evercare nurse care management record for the patient, which is independent of physician records and not directly accessible by physicians.

All individuals enrolled in the studied SNP were eligible for inclusion in the evaluation if they had had at least 13 months of continuous enrollment, were aged 65 and older, were not institutionalized for more than half of the study period, and were clinically vulnerable based on a hierarchical condition category (HCC) score of 3 or more. An individual's HCC score characterizes the person's level of illness as a predictor of health expenditure. Individuals with at least one HCC score of 3 or greater during the study period represented 10% of the SNP enrollees; individuals in this HCC risk category have a mean of two acute care hospitalizations annually. For all individuals who met entry criteria, utilization data describing physician visits were evaluated to identify all outpatient physician visits. Primary care physicians who treated the individual during the study period were identified. For individuals with no primary care visits, the specialist with a preponderance of visits was identified as the primary care provider. Individuals with no outpatient care or no identifiable primary care provider were excluded from the sample.

Retrieval of Physician Medical Records and Evercare Records

Medical records were requested from primary care physicians (and primary care providing specialists) caring for eligible individuals. If more than one primary care physician provided care for an individual, all primary care physicians' records were sought. The study period was February 1, 2007, to February 29, 2008; records were requested dating back to August 1, 2006, to provide historical clinical information. Historical data permitted identification of whether conditions during the study period were newly identified (incident) or were present before the study period (prevalent). Claims data were used to determine visits missing from medical record copies received, and additional requests were made of providers, if needed, to obtain a full complement of records, including all physician notes, laboratory data, diagnostic studies, consultation reports, health maintenance summaries, medication and problem lists, and advance directives.

Development of a SNP Set of Quality Indicators and Medical Record Abstraction

From the 392 quality indicators in the ACOVE-3 set,¹² a group of measures aimed at vulnerable SNP outpatients was selected. Measures were excluded if they could not be measured from outpatient primary care medical records (such as inpatient care or care provided mainly by specialists) or if they focused on conditions less germane to SNP patients (e.g., malignancy treatment). One hundred seven quality indicators contained in 12 conditions (chronic obstructive pulmonary disease (COPD), dementia, depression, diabetes mellitus, end-of-life care, falls and mobility problems, heart failure, ischemic heart disease, medication use, screening and prevention, undernutrition, and urinary incontinence) were identified for study.

A medical record abstraction form was developed to collect data elements needed to determine eligibility for each quality indicator and whether each recommended care process was provided. The form collected information separately from physician medical records and from the Evercare nurse care manager record to delineate the source of care. In addition to the quality indicator elements, records were abstracted to obtain selected demographic information and comorbid conditions. All aspects of the physician medical records were examined in the data collection, and structured data entry and free text nursing notes were included in extracting information from the Evercare record.

Medical Record Abstraction, Scoring, and Analysis

Trained nurses at RAND abstracted the outpatient medical records and Evercare nurse records. A second nurse reabstracted a 10% randomly selected sample of medical records to determine the reliability of the abstraction process. Overall, 99.5% of quality indicators had identical eligibility in abstracted and reabstracted charts (pooled kappa = 0.99). Of the 663 quality indicators with eligibility in these records, 95% had the identical quality indicator scores in the abstracted and reabstracted records (pooled kappa = 0.91).

When an individual was eligible for a quality indicator, a score of 1 was assigned if the individual received the recommended care process and a score of 0 if not. An individual could trigger some quality indicators more than once; in this case, a score between 0 and 1 was possible. Credit was conferred for a clinician offering a treatment even if the individual refused it. For individuals with documented poor prognosis (anticipated survival < 6 months) or advanced dementia, selected quality indicators were excluded from application.¹³

Quality of care was computed at the level of the individual. Scores are presented overall, at the condition level, and (in Appendix A1) according to quality indicator. Quality of care was computed based on the physician medical record abstraction; because of the additional interest in whether there was value added from the SNP care structure, the additional contribution of the Evercare nurse also was evaluated. Evercare nurse care could add to physician care in two ways; for quality indicators triggered but not passed in the physician medical record, the Evercare nurse could provide the recommended care process, and the Evercare nurse record could be the source that identified the individual as eligible for a quality indicator (where such eligibility was not triggered in the physician medical record) and the Evercare nurse record was also the source of whether the recommended care was provided. Thus, two scores were computed: a physician score and a physician plus Evercare nurse score. Last, quality of care of individuals who received any care from the Evercare nurse was compared with that of those who did not.

RESULTS

Of 302 individuals aged 65 and older who were enrolled in the SNP for 13 continuous months and had an HCC score of 3 or greater during the study period, 40 were not

eligible for quality-of-care evaluation. (Seven did not reside in studied counties, 18 had received no office-based outpatient care, and 15 had no identifiable primary care physician during the 13-month study period.) Primary care records were sought for the 262 individuals who received primary care, and medical records were obtained for 231 individuals (88% of those for whom records were sought and 76% of all vulnerable older adults in the SNP).

The 231 vulnerable SNP patients had a mean age of 76.5; two-thirds were women, approximately half were white, and the primary language was English for approximately three-quarters. Forty-three percent were widowed and 26% married. More than 80% lived at home, and 36% lived at home alone. Most rated their health as good or fair on a 5-point from excellent to poor scale (Table 1).

Sixty-five percent of participants had diabetes mellitus, and 72% had ischemic heart disease. More than half had heart failure, 53% had a diagnosis of COPD, and 44% had a history of depression or were depressed. Thirty-seven percent of the sample was obese, 7% had documentation of poor prognosis, and 2% had advanced dementia (Table 2).

Table 1. Description of Vulnerable Older Adults Enrolled in One Evercare Dual Special Needs Plan (N = 231)

Characteristic	Value*
Sex, n (%)	
Female	155 (67)
Male	76 (33)
Age, mean (SD)	76.5 ± 7.6
Marital status, n (%)	
Married	59 (26)
Widowed	99 (43)
Single	43 (19)
Other	18 (8)
No data	12 (5)
Living situation, n (%)	
Independent and alone	83 (36)
In home with others	104 (45)
Assisted living, skilled nursing facility, other venue	26 (11)
Missing	18 (8)
Race, n (%)	
White	118 (51)
Hispanic	43 (19)
African American	39 (17)
Asian	3 (1)
Other	2 (1)
Missing	26 (11)
Primary language, n (%)	
English	174 (75)
Spanish	42 (18)
Other	5 (2)
Missing	10 (4)
Self-rated health, n (%)	
Excellent	2 (1)
Very good	14 (6)
Good	67 (29)
Fair	85 (37)
Poor	20 (9)
Missing	43 (19)

*Some variables had missing data from medical records and Evercare record.

Table 2. Medical Conditions of Vulnerable Older Adults Enrolled in One Evercare Special Needs Plan (N = 231)

Condition	Overall	Diagnosis	
		New Diagnosis	Only in Evercare Nurse Record
	N (%)		
Chronic obstructive pulmonary disease	122 (53)	7 (3)	14 (6)
Dementia	41 (18)	4 (2)	6 (3)
Depression	102 (44)	7 (3)	13 (6)
Diabetes mellitus	150 (65)	6 (3)	2 (1)
Falls or mobility disorder	81 (35)	–	30 (13)
Heart failure	133 (58)	12 (5)	26 (11)
Ischemic heart disease	166 (72)	6 (3)	20 (9)
Undernutrition	36 (16)	–	–
Obesity	86 (37)	–	–
Urinary incontinence	81 (35)	–	38 (16)
Tobacco use	32 (14)	–	–
Documented poor prognosis	17 (7)	–	–
Advanced dementia	4 (2)	–	–

During the 13-month study period, a mean of 4.9 ± 2.8 (range: 1–13) physicians cared for SNP patients in an out-patient setting, and SNP patients made a mean of 16.2 ± 10.4 (range: 1–78) physician visits. A mean of 1.4 ± 0.7 (range: 0–5) primary care physicians and 3.4 ± 2.6 (range: 0–12) specialist physicians cared for them. They made a mean of 7.4 ± 4.4 (range: 0–23) visits to primary care physicians and 8.8 ± 8.7 (range: 0–60) visits to specialist physicians. As seen in Table 3, the most-prevalent specialist physician was a cardiologist, seen by 126 participants for a mean of 4.4 visits during the study period, followed by gastroenterologists, orthopedic surgeons, and ophthalmologists. The largest number of visits for participants seeing a particular specialist was to oncologists (5.9 visits during the study period), cardiologists (4.4), nephrologists (3.8), and rheumatologists (3.3). Sixty-five percent of participants were hospitalized during the study period.

Quality of Care Provided by Physicians and Physicians Plus Nurses

Overall, the 231 participants were eligible for 5,569 clinical actions measured by quality indicators based on physician medical records. Recommended care was provided according to physician records for 53% of these situations. As seen in Table 4, recommended care was provided for only 12% of end-of-life care processes but for 78% of concerns about diabetes mellitus. In addition to diabetes mellitus, recommended care was provided in more than two-thirds of evaluated clinical circumstances for ischemic heart disease, medication use, depression care, heart failure, and COPD. In addition to end-of-life care, recommended care was provided in less than one-third of measured clinical situations involving falls and urinary incontinence.

When care that the Evercare nurse provided was allowed to supplement in clinical situations in which

Table 3. Description of Clinicians Caring for Vulnerable Older Adults Enrolled in One Evercare Special Needs Plan Over 1 Year (N = 231)

Clinician	Participants with ≥ 1 Physician Visits, n	Number of Visits, Mean \pm Standard Deviation (Range)*
Physicians caring for participant	231	16.2 ± 10.4 (1–78)
Primary care physicians	228	7.5 ± 4.3 (1–23)
Specialist physicians	205	10.0 ± 8.7 (1–60)
Cardiologist	126	4.4 ± 5.8 (1–51)
Gastroenterologist	52	1.8 ± 1.1 (1–5)
Orthopedic surgeon	51	2.3 ± 2.1 (1–12)
Ophthalmologist	49	1.7 ± 1.3 (1–7)
Pulmonologist	48	3.3 ± 2.7 (1–13)
Oncologist	36	5.9 ± 6.3 (1–26)
Urologist	34	2.1 ± 1.3 (1–6)
Nephrologist	32	3.8 ± 2.7 (1–12)
Dermatologist	30	2.4 ± 1.8 (1–9)
Otolaryngologist	28	1.7 ± 1.1 (1–5)
Neurologist	28	2.5 ± 2.0 (1–8)
Surgeon, general	26	1.8 ± 1.1 (1–6)
Endocrinologist	21	2.5 ± 1.7 (1–7)
Vascular Surgeon	21	2.6 ± 3.0 (1–14)
Rheumatologist	19	3.3 ± 2.3 (1–8)
Obstetrician–gynecologist	17	1.6 ± 1.1 (1–5)

* Mean number of visits in those with at least one visit.

physicians failed to provide recommended care (including 115 clinical circumstances with eligibility identified in the nurse record), overall quality of care was 69%. Quality of care according to condition ranged from 43% for urinary incontinence to 81% for depression and ischemic heart disease. The largest changes between “physician only” and “nurse plus physician” care were for end-of-life care,

Table 4. Comparison of Quality of Care Provided by Physician Alone and Physician Plus Evercare Nurse

Condition	Physician Care		Physician Plus Nurse Care	
	Eligible, n*	Pass, %	Eligible, n*	Pass, %
Chronic obstructive pulmonary disease	250	69	255	77
Dementia	581	38	592	69
Depression	327	73	335	81
Diabetes mellitus	608	78	608	80
End-of-life care	237	12	253	70
Falls	472	30	492	63
Heart failure	154	69	154	69
Ischemic heart disease	387	77	388	81
Medication use	704	77	711	77
Prevention	1,032	41	1,078	66
Undernutrition	521	44	521	49
Urinary incontinence	296	31	296	43
Total	5,569	53	5,684	69

* Number of quality indicators for which the 231 participants were eligible.

dementia, falls, prevention, and urinary incontinence. Including the nurse contribution, only two conditions had recommended care provided for less than half of the evaluated circumstances (Table 4, column 5).

Of the 231 participants in the study, 200 had at least some care-related interaction with the Evercare nurse, but for 31 participants, the nurse was unable to provide care because the participant could not be reached ($n = 14$), refused care ($n = 8$), or was otherwise lost to follow-up ($n = 9$). The 200 participants who interacted with the Evercare nurse received 54% of recommended care for evaluated circumstances from their physicians and received recommended care for 72% of 4,973 clinical situations from the physician plus nurse. This was significantly more than the 48% of 711 situations in which the physician alone provided recommended care for the 31 participants who had no care from the Evercare nurse.

Table 5 shows some of the clinical areas in which the Evercare nurse had the greatest effect in supplementing physician care. Nurses performed screening for cognitive and functional impairment, falls, and urinary incontinence when the physicians often did not. The nurses attended to advance care planning, complications of cognitive impairment, falls evaluation, vaccination status, and screening for reversible causes of undernutrition to fill in physician gaps. The nurses added little supplementation to quality of care for chronic medical conditions (e.g., diabetes mellitus and heart failure) for the clinical areas measured in this study.

DISCUSSION

Care provided to vulnerable older persons is in need of improvement, and SNP plans were developed as a potential mechanism to effect this change. Evercare is a large provider of SNP care, and the Evercare nurse model aims to enhance prevention, facilitate coordination and continuity of care and communication, and align care with participant goals, which is consistent with the SNP goals, but

this model, which evolved from the institutional Evercare model, has not been formally tested in the United States, and the application to the community in the United Kingdom found no effect on utilization outcomes.¹⁴ This evaluation of process of care provided to the most-vulnerable participants enrolled in one mature Evercare SNP shows that the Evercare nurse model often fills in deficits in physician-provided care for geriatric conditions. Nurse plus physician efforts provided more than 60% of recommended care for end-of-life care, falls, dementia, and prevention, which exceeds the findings in other cohorts of vulnerable older adults.^{4,5,15}

Since the initiation of SNP plans in 2003, there has been a mandate to evaluate the quality of SNP care to understand whether this type of plan is successful at enhancing care and outcomes and constraining costs generated by the expanding number of older adults with a substantial burden of chronic disease.¹ This analysis confirms that the most vulnerable group of individuals enrolled in the studied SNP carries a substantial burden of chronic disease and that this cohort uses a large amount of care. Efforts have focused on evaluation of structural aspects of SNP care and coordination of benefits for dually eligible individuals, as well as some elements of process of care.^{9,10} This study shows that a full set of process-of-care quality measures aimed at the care needs of vulnerable older adults can be implemented to evaluate SNP care, albeit using medical record review, and that—at least in one SNP model—such care is better than has been found for other cohorts of vulnerable older adults. The medical record review methods undertaken in this evaluation are resource intensive and may not be suitable for routine clinical care evaluation but can provide a roadmap for the development of data elements for electronic health record system development. The quality measures used in this study were derived from the ACOVE group of measures that have linked better quality of care to longer survival¹⁶ and better functional outcomes¹⁷ in community-dwelling older persons.

Table 5. Comparison of Quality of Care Provided by Physician Alone and Physician Plus Evercare Nurse for Quality Indicators in Which the Nurse Played a Substantial Role

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n*	Pass, %	Eligible, n*	Pass, %
Annual evaluation of memory	227	74	227	95
Annual evaluation of function	230	7	230	58
Counseling caregiver of individual with dementia about diagnosis, behavioral symptoms, safety and resources	35	6	35	23
Behavioral interventions for behavioral symptoms of dementia	—	—	—	—
Behavioral	1	100	3	100
Psychological	8	38	12	67
Sleep	7	29	9	33
Screen for falls	231	26	231	81
Referral for eye examination for a faller	33	3	33	21
Home hazard evaluation for a faller	34	26	54	63
Identification of or discussion with surrogate decision-maker	231	11	231	68
Annual offer of influenza vaccine	228	49	228	77
Documentation of pneumonia vaccine	231	24	231	77
Screen for reversible causes of undernutrition	36	6	36	31

* Number of quality indicators for which the 231 participants were eligible.

This work adds to the formal evaluations that have been performed on the Evercare model in caring for vulnerable individuals. In the institutional setting, this model employing a nurse practitioner providing front-line continuity care demonstrated lower hospitalization,¹⁸ better cost-effectiveness of care,¹⁹ and greater family satisfaction.²⁰ Although the community adaptation of the Evercare model in the United Kingdom did not demonstrate utilization savings, evaluation of that program found an expanded range of available services¹³ and greater psychosocial support and communication.²¹ Despite the substantial effect found in this evaluation, lack of integration of the nurse within the physician practice limits the Evercare nurse model evaluated in this study; it is even possible that physicians were unaware that participants belonged to the Evercare SNP at the time of clinical visits. Furthermore, the Evercare nurse model for SNP care has evolved since the process-of-care evaluation reported here. Serial evaluation of the progress of SNP programs is needed, as well as comparison of this plan with models employed in other health plans.

This quality-of-care evaluation has several limitations. The evaluation focused on a single SNP and a single SNP model; the study has a relatively small sample size, yet the individuals studied were medically complex, with each individual eligible for a mean of 24 quality indicators. The SNP evaluated was one of the larger plans at the time of this study; evaluation of smaller plans and additional SNP plan types is needed. Additionally, this study used a novel method of identifying vulnerable older adults for application of ACOVE measures, but the set of measures employed in this effort could be applicable to the full SNP population. Furthermore, because records were not collected from inpatient or specialty providers, those aspects of care could not be evaluated, and continuity and coordination of care—critical aspects of care for vulnerable older adults—could not be measured. This was an observational study; care comparisons between individuals receiving Evercare nurse care and those who did not should be interpreted with caution, recognizing that the latter group probably has different characteristics and received less recommended care from physicians alone. Furthermore, the study evaluated only the most-complex individuals in the studied plan, and the results cannot necessarily be generalized to individuals with less burden of illness.

Nevertheless, this study suggests the potential value of SNP care—at least for the one SNP evaluated—because, for vulnerable older enrollees, care was delivered for geriatric conditions that had not been provided in prior evaluations and that the physicians did not provide to the individuals in the studied cohort. Whether the quality process of care identified in this SNP is found in other plans and in other SNP models requires additional evaluation. Most importantly, these findings should be compared with outcomes in a similarly complex cohort of older fee-for-service Medicare beneficiaries, and process of care should be linked to outcomes.

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Author Contributions: NW, CR, JM, DG: Study conception and design. NW, CR, LN, CK, DM, DG: Acquisition of data. NW, CR, RB, DG: Analysis and interpretation of data.

Sponsor's Role: The sponsor played a role in the original conception of the project and in assisting with collection of data but did not participate in development of the methods; analysis or interpretation of the data; drafting of the paper; or the decision to publish the findings.

REFERENCES

- Centers for Medicare and Medicaid Services. Special needs plans. Overview [on-line]. Available at <http://www.cms.hhs.gov/specialneedsplans/>. Accessed August 22, 2011.
- Grabowski DC. Special Needs Plans and the coordination of benefits and services for dual eligibles. *Health Aff (Millwood)* 2009;28:136–146.
- Verdier J, Gold M, Davis S. Do We Know If Medicare Advantage Special Needs Plans Are Special? Medicare Issue Brief. Menlo Park, Calif: Kaiser Family Foundation, 2008.
- Wenger NS, Solomon DH, Roth CP et al. The quality of medical care provided to vulnerable community-dwelling older patients. *Ann Intern Med* 2003;139:740–747.
- Counsell SR, Callahan CM, Clark DO et al. Geriatric care management for low-income seniors: A randomized controlled trial. *JAMA* 2007;298:2623–2633.
- Haber SG, Mitchell JB. Access to Physicians' Services for Vulnerable Medicare Beneficiaries. *Inquiry* 1999/2000;36:445–460.
- Medicare Payment Advisory Commission. Report to the Congress: Medicare Payment Policy. Washington, DC: MedPac, 2004.
- MacLean CH, Louie R, Shekelle PG et al. Comparison of Administrative data and medical records to measure the Quality of Medical Care Provided to Vulnerable Older Patients. *Med Care* 2006;44:141–148.
- Centers for Medicare and Medicaid Services. Special needs plans assessment program overview [on-line]. <http://www.cms.hhs.gov/specialneedsplans/> Accessed August 22, 2011.
- Centers for Medicare and Medicaid Services. 2008 SNP Data. http://www.cms.hhs.gov/SpecialNeedsPlans/Downloads/CMS_SNP_Measures.pdf Accessed August 22, 2011.
- Kappas-Larson P. The evercare story: Reshaping the health care model, revolutionizing long-term care. *J Nurse Practitioners* 2008;4:132–136.
- 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–S252.
- Wenger NS, Solomon DH, Amin A et al. Application of assessing care of vulnerable elders-3 quality indicators to patients with advanced dementia and poor prognosis. *J Am Geriatr Soc* 2007;55(Suppl 2):S457–S463.
- Gravelle H, Dusheiko M, Sheaff R et al. Impact of case management (Evercare) on frail elderly patients: Controlled before and after analysis of quantitative outcome data. *BMJ* 2007;334:31.
- Wenger NS, Roth CP, Shekelle PG et al. A practice-based intervention to improve primary care for falls, urinary incontinence, and dementia. *J Am Geriatr Soc* 2009;57:547–555.

16. Higashi T, Shekelle PG, Adams JL et al. Quality of care is associated with survival in vulnerable older patients. *Ann Intern Med* 2005;143:274–281.
17. Zingmond DS, Ettner SL, Wilber KH et al. Association of claims-based quality of care measures with outcomes among community-dwelling vulnerable elders. *Med Care* 2011;49:553–559.
18. Kane RL, Flood S, Bershadsky B et al. Effect of an innovative medicare managed care program on the quality of care for nursing home residents. *Gerontologist* 2004;44:95–103.
19. Kane RL, Keckhafer G, Flood S et al. The effect of Evercare on hospital use. *J Am Geriatr Soc* 2003;51:1427–1434.
20. Kane RL, Flood S, Keckhafer G et al. Nursing home residents covered by Medicare risk contracts: Early findings from the EverCare evaluation project. *J Am Geriatr Soc* 2002;50:719–727.
21. Sheaff R, Boaden R, Sargent P et al. Impacts of case management for frail elderly people: A qualitative study. *J Health Serv Res Policy* 2009;14:88–95.

Appendix A1. Quality of Care Provided by Physician Alone and Physician Plus Evercare Nurse According to Quality Indicator

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
COPD				
IF a VE with COPD lives with others who smoke, THEN the individual and/or smoker should be counseled to eliminate smoking in the home.	1	100	4	100
IF a VE with COPD is new to a primary care practice, THEN smoking status should be documented, and if the individual ever smoked, smoking status should be assessed annually.	105	83	105	92
IF a VE with COPD is a current smoker, THEN counseling to quit smoking should be documented annually.	26	81	28	86
IF a VE has COPD (GOLD stage \geq I), THEN s/he should be prescribed a rapid-acting bronchodilator.	105	57	105	64
IF a VE with COPD is given a new inhaler device, spacer, or nebulizer, THEN training to use the device should be documented.	11	18	11	18
IF a VE with moderate to very severe COPD (GOLD stage II–IV) has symptoms not controlled by as-needed bronchodilator use or had two or more exacerbations in the past year, THEN a long-acting bronchodilator should be prescribed.	1	100	1	100
IF a VE with severe to very severe COPD (GOLD stage III–IV) had \geq 2 exacerbations requiring antibiotics or oral corticosteroids in the past year, THEN (in addition to a long-acting bronchodilator) inhaled steroids (if not on oral steroids) should be prescribed.	1	100	1	100
COPD summary	250	69	255	77
Dementia				
ALL VEs should be evaluated annually for changes in memory.*	227	74	227	95
ALL VEs should be evaluated annually for changes in function.	230	7	230	58
IF a VE screens positive for dementia, THEN a physician should document an objective cognitive evaluation that tests \geq 2 cognitive domains.*	15	20	18	17
IF a VE screens positive for dementia and is taking medications that are commonly associated with mental status changes in older adults, THEN the physician should discontinue or justify continuing these medications.	5	0	5	0
IF a VE is newly diagnosed with dementia, THEN a physician should perform a neurological examination that includes evaluation of gait, motor function, and reflexes.	4	50	4	50
IF a VE is newly diagnosed with dementia, THEN complete blood count, thyroid testing, electrolytes, liver function tests, glucose, blood urea nitrogen, serum B12, and a syphilis test should be performed.	4	72	4	72
IF a VE is newly diagnosed with dementia AND has risk factors for HIV, THEN HIV testing should be offered.	0	–	0	–
IF a VE has newly diagnosed dementia, THEN s/he should be screened for depression during the initial evaluation period.	4	100	4	100
IF a VE has been diagnosed with mild to moderate Alzheimer's disease, mild to moderate vascular dementia, or Lewy body dementia, THEN there should be a documented discussion with the individual and/or caregiver about cholinesterase inhibitor treatment.*	1	100	1	100
IF a VE has mild to moderate vascular or mixed dementia, THEN s/he should receive stroke prophylaxis.*	1	100	1	100
IF a VE with dementia has a caregiver, THEN the individual and/or caregiver should be given information on the following: Dementia diagnosis, prognosis, and associated behavioral symptoms Home occupational safety, Community resources.	35	23	35	23

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
IF a VE has dementia, THEN s/he should be screened annually for behavioral symptoms of dementia.	35	71	35	71
IF a VE with dementia has behavioral symptoms, THEN specific target symptoms should be documented and behavioral interventions instituted first or concurrently with pharmacotherapy, OR if treating first with a pharmacological intervention, then severe symptoms or safety concerns should be present and documented	1	100	3	100
Behavioral				
Psychological	8	38	12	67
Sleep	7	29	9	33
IF a VE with dementia and behavioral symptoms is newly treated with an antipsychotic, THEN there should be a documented risk–benefit discussion.	0	–	0	–
IF a VE has newly diagnosed dementia, THEN one of the following should occur (consistent with state law):	4	0	4	0
Individual advised not to drive a motor vehicle				
Referral to the Department of Motor Vehicles to test driving ability				
Referral to a driver's safety course that includes assessment of driving ability				
Dementia summary	581	69	592	69
Depression				
ALL VEs should have documentation of a screen for depression during the initial primary care evaluation and annually.*	227	83	227	95
IF a VE presents with one of the following symptoms (and the symptom has not previously been documented as a chronic condition): sad mood, feeling down, insomnia or difficulties with sleep, apathy or loss of interest in pleasurable activities, complaints of memory loss, unexplained weight loss, unexplained fatigue or low energy, THEN the individual should be asked about depression, treated for depression, or referred to a mental health professional within 2 weeks of presentation*	6	83	14	64
Sad mood				
Sleep problem	12	67	12	75
Fatigue	13	46	13	46
Memory loss	11	55	11	55
Ten percent weight loss	7	43	7	71
IF a VE receives a diagnosis of a new depression episode, THEN the medical record should document at least three of the nine <i>Diagnostic and Statistical Manual for Mental Disorders</i> target symptoms for major depression within 2 weeks of diagnosis.*	6	33	6	33
IF a VE 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*	6	8	6	8
IF a VE has thoughts of suicide, THEN the medical record should document, on the same date, that the individual has no immediate plan for suicide or was referred for evaluation for psychiatric hospitalization.	1	100	1	100
IF a VE has thoughts of suicide, THEN the medical record should document, on the same date, that the individual was asked about access to firearms.	1	0	1	0
IF a VE receives a diagnosis of a new depression episode, THEN the medical record should document evaluation of the following within 1 month or in the prior 3 months: Hypothyroidism for women.	3	67	3	67
IF a VE receives a diagnosis of a new depression episode, THEN the medical record should document evaluation of the following within 1 month or in the prior 3 months: Substance dependence or abuse.	5	40	5	40
IF a VE is diagnosed with depression, THEN antidepressant treatment, psychotherapy, or ECT should be offered within 2 weeks after diagnosis unless there is documentation within that period that the individual has improved or unless the individual has substance abuse or dependence, in which case, treatment may wait until 8 weeks after the individual is in a drug- or alcohol-free state.	6	83	6	83

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
IF a VE is started on antidepressant medication, THEN the following medications should not be used as first- or second-line therapy: Tertiary amine tricyclics (amitriptyline, imipramine, doxepin, clomipramine, trimipramine) Monoamine oxidase inhibitors (unless atypical depression is present) Benzodiazepines Stimulants (except methylphenidate).	5	100	5	100
IF a VE has depression with psychotic features, THEN s/he should be referred to a psychiatrist OR should receive treatment with a combination of an antidepressant and an antipsychotic, or with ECT.	0	–	0	–
IF a VE is newly treated for depression, THEN the following should be documented at the first follow-up visit to the same physician or to a mental health provider within 4 weeks of treatment initiation: Degree of response to at least 2 of the 9 <i>Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition</i> , target symptoms for major depression.*	5	40	5	40
IF a VE is newly treated for depression, THEN the following should be documented at the first follow-up visit to the same physician or to a mental health provider within 4 weeks of treatment initiation: Medication side effects, if he or she is taking antidepressant medications.*	4	25	4	25
IF a VE is newly treated for depression and has suicidal ideation at an outpatient visit, THEN at the next follow-up visit, which must occur within 1 week, documentation should reflect asking about suicide risk.*	1	0	1	0
IF a VE has no meaningful symptom response after 6 weeks of depression treatment, THEN one of the following treatment options should be initiated by the 8th week of treatment: Medication dose should be optimized or changed. Referral to a psychiatrist (if initial treatment was medication). Medication should be initiated or referral to a psychiatrist should be offered (if initial treatment was psychotherapy alone).	4	0	4	0
IF a VE with depression 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 ECT. Refer to a psychiatrist.	4	25	4	25
Depression summary	327	73	335	81
Diabetes mellitus				
IF a VE has diabetes mellitus, THEN HbA1c should be measured annually*	134	87	134	87
IF a VE has high HbA1c, THEN a therapeutic intervention should occur: HgbA1c 9–10.9%, within 3 months*	5	80	5	80
IF a VE has high HgbA1c, THEN a therapeutic intervention should occur: HgbA1c \geq 11%, within 1 month.*	10	65	10	65
IF a diabetic VE does not have established renal disease and is not receiving an ACE inhibitor or ARB, THEN a test for proteinuria should be done annually.*	26	35	26	35
IF a diabetic VE has proteinuria, THEN an ACE inhibitor or ARB should be prescribed.*	75	83	75	88
IF a VE has diabetes mellitus, THEN blood pressure should be measured at each primary care and endocrinology visit.*	135	93	135	93
IF a diabetic VE has a persistent (on two consecutive visits) elevation of systolic BP > 130 mmHg, THEN an intervention (e.g., pharmacological, lifestyle, compliance) should occur, or there should be documentation of a reversible cause or justification for the elevation.*	70	60	70	60
IF a diabetic VE is not on anticoagulant or antiplatelet therapy, THEN daily aspirin should be prescribed.*	135	73	135	79
IF a diabetic VE has fasting LDL-C > 130 mg/dL, THEN a pharmacological or lifestyle intervention should be offered within 3 months.*	18	67	18	67
Diabetes mellitus summary	608	78	608	80

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
End of life				
ALL VEs should have in the outpatient chart an individual's surrogate decision-maker or documentation of a discussion to identify or search for a surrogate decision-maker.	231	11	231	68
IF a VE is a caregiver for a spouse, significant other, or dependent that is terminally ill or has very limited function, THEN the VE should be assessed for caregiver financial, physical, or emotional stress.*	2	100	12	100
IF a VE's spouse or significant other dies, THEN the VE should be assessed for depression or thoughts of suicidality within 6 months.*	4	50	10	60
End-of-life summary	237	12	253	70
Falls and mobility disorders				
ALL VEs should have documentation that they were asked annually about the occurrence of recent falls.	231	26	231	81
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of a basic fall history (circumstances, medications, chronic conditions, mobility, alcohol intake) within 3 months of the report (or within 4 weeks of the report if the most recent fall occurred in the past 4 weeks).	34	59	34	68
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of orthostatic vital signs (blood pressure and pulse) within 3 months of the report (or within 4 weeks of the report if the most recent fall occurred in the past 4 weeks).	34	3	34	3
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of receipt of an eye examination in the past year or evidence of visual acuity testing within 3 months of the report.*	33	3	33	21
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of a basic gait, balance, and strength evaluation within 3 months of the report (or within 4 weeks of the report if the most recent fall occurred in the past 4 weeks).	34	9	34	9
IF a VE has new or worsening difficulty with ambulation, balance, or mobility, THEN there should be documentation of a basic gait, balance, and strength evaluation within 3 months of the report.	2	0	2	0
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of an assessment of cognitive status in the past 6 months or within 3 months of the report (or within 4 weeks of the report if the most recent fall occurred in the past 4 weeks).*	33	85	33	94
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year, THEN there should be documentation of an assessment and modification of home hazards recommended in the past year or within 3 months of the report.	34	26	54	63
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year and is taking a benzodiazepine, THEN there should be documentation of a discussion of related risks and assistance offered to reduce or discontinue benzodiazepine use.	9	0	9	0
IF a VE demonstrates decreased balance or proprioception or increased postural sway AND does not have an assistive device, THEN an evaluation or prescription for an assistive device should be offered within 3 months.	3	67	3	67
IF a VE reports a history of ≥ 2 falls (or 1 fall with injury) in the past year AND has an assistive device, THEN there should be documentation of an assistive device review in the past 6 months or within 3 months of the report (or within 4 weeks of the report if the most recent fall occurred in the past 4 weeks).	14	93	14	93
IF a VE is found to have a problem with gait, balance, strength, or endurance, THEN there should be documentation of a structured or supervised exercise program offered in the past 6 months or within 3 months of the report.*	11	64	11	64
Falls and mobility disorders summary	472	30	492	63
Heart failure				

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
IF a VE has a left ventricular ejection fraction <40%, THEN s/he should receive an ACE inhibitor (or an ARB if ACE inhibitor intolerant).*	17	82	17	82
IF a VE has heart failure and LVEF <40%, THEN s/he should be treated with a beta-blocker known to prolong survival (carvedilol, metoprolol, or bisoprolol).*	17	76	17	76
IF a VE has heart failure, LVEF <40%, and no atrial fibrillation, THEN s/he should not be treated with a first- or second-generation calcium channel blocker.	15	80	15	80
IF a VE has heart failure, THEN the following physical examination elements should be documented at each primary care/cardiology outpatient visit: Weight Blood pressure Heart rate Assessment of volume overload.	105	64	105	64
Heart failure summary	154	69	154	69
Ischemic heart disease				
IF a VE with ischemic heart disease has a LDL-C > 100 mg/dL, THEN s/he should be offered cholesterol-lowering medication.*	31	90	31	90
IF a VE with ischemic heart disease is not taking warfarin, THEN s/he should be offered daily aspirin or other antiplatelet therapy.	198	76	198	82
IF a VE has had a myocardial infarction (STEMI or NSTEMI), THEN s/he should be offered a beta-blocker and advised to continue treatment for ≥ 2 years after the infarction.*	15	87	15	87
IF a VE has ischemic heart disease, THEN s/he should be offered ACE inhibitor or ARB therapy and advised to continue the treatment indefinitely.*	126	74	126	76
IF a VE with ischemic heart disease smokes, THEN there should be documentation of smoking cessation counseling annually.*	17	88	18	89
Ischemic heart disease summary	387	77	388	81
Medication use				
IF a VE is prescribed an ongoing medication for a chronic medical condition, THEN there should be a documentation of response to therapy.	41	65	41	65
IF a VE is prescribed an ACE inhibitor, THEN s/he should have serum creatinine and potassium monitored within 2 weeks after initiation of therapy.	139	85	139	85
IF a VE is prescribed an ACE inhibitor, THEN s/he should have serum creatinine and potassium monitored at least yearly.	130	88	130	88
IF a VE is prescribed a loop diuretic, THEN s/he should have electrolytes checked within 2 weeks after initiation.	113	89	113	89
IF a VE is prescribed a loop diuretic, THEN s/he should have electrolytes checked at least yearly.	103	92	103	92
IF a VE requires a new analgesic, THEN s/he should not be prescribed propoxyphene.	75	75	75	75
IF a VE is taking a benzodiazepine (>1 month), THEN there should be annual documentation of discussion of risks and attempt to taper and discontinue the benzodiazepine.*	60	17	67	24
IF a VE receives prescription pharmacological treatment for back or neck pain, THEN cyclobenzaprine, methocarbamol, carisoprodol, chlorzoxasone, orphenadine, tizanidine, or metaxalone should not be prescribed for >1 week.*	10	20	10	20
IF a VE has iron-deficiency anemia, THEN no more than 1 tablet daily of low-dose oral iron should be prescribed.	27	44	27	44
IF a VE with a risk factor for gastrointestinal bleeding (aged ≥ 75, peptic ulcer disease, history of GI bleeding, warfarin use, chronic glucocorticoid use) is treated with a nonselective NSAID, THEN s/he should be treated concomitantly with misoprostol or a proton pump inhibitor.	6	67	6	67
IF a VE with >2 risk factors for gastrointestinal bleeding (aged ≥ 75, peptic ulcer disease, history of GI bleeding, warfarin use, chronic glucocorticoid use) is treated with daily aspirin, THEN s/he should be treated concomitantly with misoprostol or a proton pump inhibitor.	0	–	0	–
Medication use summary	704	77	711	77
Screening and prevention				
All VEs should be offered an annual influenza vaccination.	228	49	228	77

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
ALL VEs should have documentation whether they have received a pneumococcal vaccination and, if so, at what age.	231	24	231	77
IF a VE has not received a pneumococcal vaccination or received it >5 years ago and before age 65, THEN s/he should be offered pneumococcal vaccination.	10	60	45	44
ALL VEs should be screened for alcohol misuse within 3 months of entering a new primary care practice.*	9	89	9	100
IF a VE misuses alcohol, THEN s/he should be counseled to decrease intake or be referred to an alcohol program within 3 months.*	4	50	8	38
ALL VEs should be screened for tobacco use within 3 months of entering a new primary care practice.*	9	100	9	100
IF a VE uses tobacco, THEN s/he should be counseled to quit within 3 months and annually.*	32	66	34	71
IF a VE is ready to quit using tobacco, THEN there should be documentation of a quit date, discussion of therapies to aid cessation, and a follow-up visit within 1 month of the quit date.	7	0	10	0
ALL VEs should have an assessment of activity level (with encouragement to be active) annually.*	210	26	210	40
ALL non-wheelchair-bound VEs should have their height, weight, and BMI documented within 3 months of the initial primary care visit.	0	–	0	–
IF a VE is obese (BMI ≥ 30 kg/m ²), THEN s/he should be advised to lose weight annually.*	80	54	80	60
IF a VE presents with contusions, burns, bite marks, genital or rectal trauma, pressure ulcers, or BMI <17.5 with no clinical explanation, THEN s/he should be asked about possible mistreatment or referred to a social worker for assessment of mistreatment.	3	0	6	17
ALL VEs new to a primary care practice should receive the elements of a comprehensive geriatric assessment (CGA) within 3 months:*	209	54	209	79
Nutrition	–	78	–	86
Hearing	–	48	–	89
Vision	–	58	–	89
Affect	–	83	–	95
Social support	–	70	–	96
Cognition	–	83	–	97
Gait, balance, and strength	–	16	–	16
Function	–	0	–	67
Screening and prevention summary	1,032	41	1,079	66
Undernutrition				
ALL VEs should be weighed at each primary care visit and weights documented in the medical record.	231	69	231	69
ALL VEs in stable health states should take 800 IU (or equivalent) of vitamin D supplementation daily.*	210	18	210	24
IF a VE has involuntary weight loss of $\geq 10\%$ of body weight in ≤ 1 year, THEN weight loss (or a related disorder) should be documented in the medical record as recognition of undernutrition as a potential problem.	8	88	8	88
IF a VE has involuntary weight loss of $\geq 10\%$ in ≤ 1 year or hypoalbuminemia (<3.5 g/dL), THEN s/he should be evaluated for potentially reversible causes of poor nutritional intake including assessment of:	36	6	36	31
Dental status (e.g., dentition, gum health, dental referral)				
Food security (e.g., financial status, social work referral)				
Food-related functional status (e.g., ability to feed, prepare meals)				
Appetite and intake (e.g., 72-hour calorie count, dietitian referral)				
Swallowing ability (e.g., swallowing study, bedside or referral)				
Dietary restrictions (e.g., low = salt or low = protein diet)				
IF a VE has involuntary weight loss of $\geq 10\%$ in ≤ 1 year or hypoalbuminemia (<3.5 g/dL), THEN s/he should be evaluated for potentially relevant comorbid conditions, including assessment of:	36	61	36	69

(Continued)

Appendix A1. (Contd.)

Quality Indicator	Physician Care		Physician Plus Nurse Care	
	Eligible, n	Pass %	Eligible, n	Pass %
Medications associated with decreased appetite				
Depression				
Cognitive impairment				
Thyroid function				
Screen for cancer				
Diabetes mellitus				
Malabsorption				
Undernutrition summary	521	44	521	49
Urinary incontinence				
ALL VEs should have documentation of the presence or absence of urinary incontinence during the initial evaluation.	230	35	230	49
IF a VE has new UI with bothersome symptoms, THEN a targeted history should be documented.	7	0	7	0
IF a VE has established UI with bothersome symptoms, THEN a targeted history should be documented.	4	0	4	0
IF a VE has new UI, THEN a targeted physical examination should be documented.*	7	29	7	29
IF a VE has new UI or established UI with bothersome symptoms, THEN a urinalysis (or dipstick UA) AND a urine culture if the urinalysis demonstrates pyuria or hematuria should be obtained.	11	36	11	36
IF a male VE presenting with new or worsening urinary incontinence or complaints of incomplete emptying or LUTS and has neurological disease (e.g., spinal cord injury, multiple sclerosis) or has had a procedure that can affect innervation of the bladder or urethral sphincter mechanism (e.g., spinal surgery), THEN he should have a postvoid residual measurement.	1	0	1	0
IF a VE has a postvoid residual >300 mL, THEN s/he should have a serum creatinine within 72 hours and (if no reversible causes found) referred to a clinician with urological expertise within 2 months.*	0	–	0	–
IF a VE with UI has a PVR between 200 and 300 mL, THEN renal function should be assessed within 3 months.	0	–	0	–
IF a VE has new UI or established UI with bothersome symptoms, AND the UI is treated with medication or surgery, THEN classification of the type of or suspected reason(s) for UI should be documented.	5	80	5	80
IF a VE has new UI or established UI with bothersome symptoms, THEN treatment options should be discussed within 3 months.	11	9	11	9
IF a VE is treated for UI, THEN response to treatment should be documented within 3 months.	11	9	11	27
IF a cognitively intact, ambulatory VE has stress, urge, or mixed UI, THEN behavioral/lifestyle treatment should be offered.*	9	11	9	11
Urinary incontinence summary	296	31	296	43
All conditions	5,569	53	5,684	69

*Quality indicator not applied, in whole or in part, to individuals with advanced dementia or poor prognosis. For detailed explanation, see reference 12.

ACE = angiotensin converting enzyme; ARB = ACE receptor blocker; BMI = body mass index; BP = blood pressure; COPD = chronic obstructive pulmonary disease; ECT = electroconvulsive therapy; GI = gastrointestinal; HbA1c = glycosylated hemoglobin; HIV = human immunodeficiency virus; LDL-C = low density lipoprotein cholesterol; LUTS = lower urinary tract symptom; LVEF = left ventricular ejection fraction; NSAID = nonsteroidal antiinflammatory drug; STEMI = ST elevation myocardial infarction; NSTEMI = non-ST elevation myocardial infarction; PVR = postvoid residual; UI = urinary incontinence; VE = vulnerable elder.