

WORKING P A P E R

Quality Indicators of Continuity and Coordination of Care for Vulnerable Elder Persons

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**QUALITY INDICATORS OF CONTINUITY AND COORDINATION OF CARE
FOR VULNERABLE ELDER PERSONS**

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Introduction

Continuity and coordination of care are attributes of medical care that influence its quality. Donabedian describes coordination of care as the “process by which the elements and relationships of medical care during any one sequence of care are fitted together in an overall design. Continuity means lack of interruption in needed care, and the maintenance of the relatedness between successive sequences of medical care....A fundamental feature of continuity is the preservation of information about past findings, evaluations and decisions, and the use of these in current management....Coordination involves the sharing of such information among a number of providers to achieve a coherent scheme of management.”(1) The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) defines this function as “matching the patient’s needs with the appropriate level and type of medical, health and social services.”(2) The JCAHO National Library of Healthcare Indicators (NLHI) defines continuity as the degree to which the care for the patient is coordinated among practitioners, among organizations and over time.(3) Among the 1997 set of 123 NHLI quality-of-care indicators, 87 included a component representing continuity. Continuity and coordination of care are particularly important for older patients because they are apt to have multiple medical problems which may be treated by several clinicians.(4) The complexity of treating multiple conditions simultaneously requires explicit coordination of care.

The quality-of-care indicators in this monograph focus on the domains of continuity described by Meijer and Vermeij:(5)

- Maintaining continuity of care from the perspective of the patient
- Maintaining continuity and cooperation among providers and between venues of care.

Many individuals and studies equate continuity of care with having a primary care physician. Several studies have demonstrated an association between physician-patient continuity and greater patient satisfaction,(6,7) fewer emergent admissions and lower inpatient length of stay,(7) higher frequency of counseling,(8) more time efficiency and less resource use,(9) and better preventive care.(10) Most of these studies evaluated levels of continuity between patients and primary care physicians; there is inadequate investigation of whether the care that physician specialists provide could also constitute continuity. In addition, not all studies of continuity show benefits.(11,12)

Other literature has focused on continuity provided by non-clinician “case managers.” Commonly, these case managers are social workers or nurses. Several studies of specific, high-utilizing patient populations have found that case managers reduce costs,(13) and some studies have found that they generate improved clinical outcomes.(14) However, other case manager studies have not shown outcome benefits.(15,16) Therefore, the set of quality indicators proposed in this monograph focuses on the patient’s physician, although not necessarily a “primary care physician.” Furthermore, the proposed indicators focus on the components of continuity and coordination, rather than on the structure that is in place to carry out these practices. This position is reinforced by a review of interventions that found that reminder systems, prevention protocols, multidisciplinary teams, and regional organization did not improve continuity of care.(17) As an explanation for the interventions’ lack of impact on continuity, the authors hypothesized that “each of these programs focused on reorganization of the system or structure of care...rather than on providers or patients,

and did not address specific methods for insuring continuity in day-to-day operations.”(17)

Within the ACOVE quality indicators, which cover 21 specific conditions, two different types of coordination of care indicators might be envisioned: those that are based on a patient having a combination of health conditions and those that are not condition-linked. The former might include indicators targeted to patients with both hypertension and diabetes mellitus (see Diabetes #7), or to patients with both cognitive impairment and depression (see Dementia #10); these indicators are included in the condition-specific articles as are specifications regarding the frequency of follow-up required by specific conditions (e.g., continuity after a new diagnosis of depression, Depression #15, #16, #17). Indicators included in this module focus on generic issues in continuity and coordination of care that can apply regardless of diagnosis.

Methods

The methods for developing these quality indicators, including literature review and expert panel consideration, are detailed in a preceding paper.(18) For continuity and coordination of care, the structured literature review identified 4,480 titles, from which abstracts and articles were identified that were relevant to this report. Based on the literature and the authors’ expertise, 15 potential quality indicators were proposed.

Results

Of the 15 potential quality indicators, 13 were judged valid by the expert panel process. (see Quality Indicator Table), 1 was merged by the panel into an accepted

indicator and 1 was not accepted. The evidence that supports each of the indicators judged to be valid by the expert panel process is described below.

Quality Indicator #1

Identification of Source of Care

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 **BECAUSE** identification of a usual source of care facilitates timely medical care and continuity of care.

Supporting evidence: Access to an identifiable source of medical care has been demonstrated in observational studies to be associated with improved clinical outcomes (19,20) and a reduction in inappropriate emergency room use.(21) Access to care is widely viewed as an essential factor in providing quality medical care to vulnerable individuals.(22,23) Many different definitions of what constitutes having a “usual provider” or “source of continuity of care” exist,(24) and some studies have shown no difference between various methods of defining access to care.(25) In this quality indicator, we equate identifying a specific physician responsible for the patient’s care with having a usual site of care.

Quality Indicator #2

Medication Follow-up in the Outpatient Setting

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:

- that the medication is being taken,
- that the physician asked about the medication (e.g., side effects or adherence or availability), or
- that the medication was not started because it was not needed or because it was changed

BECAUSE newly started medications should be followed up to enhance adherence and to identify medications that were never started.

Supporting evidence: Although no clinical trials have evaluated whether review of newly initiated medication results in improved patient outcomes, follow-up represents one component of coordinating care. Follow-up of medications is particularly important because medications that are not started after they are prescribed represent missed therapeutic opportunities. The complexities of health care delivery impose obstacles to initiation of and adherence to new medications (e.g., formulary restrictions). Some patients may not have begun new medications by the time of their next visit with their health care provider. Observational studies have shown that medication adherence is better if the provider schedules a follow-up appointment (26) and if the physician-patient relationship is strong.(27)

Quality Indicator #3

Continuity of Medication Between Physicians

IF a vulnerable elder is under the outpatient care of two or more physicians, and one of those physicians has prescribed a new prescription medication or a change in medication (medication termination or change in dosage), **THEN** subsequent medical record entries by the non-prescribing physician should acknowledge the medication change **BECAUSE** physician knowledge of a patient's medication regimen, including medications initiated or changed by other physicians, is critical to avoid medication interactions and medication prescribing errors.

Supporting evidence: Only if physicians are aware of all of the medications prescribed for their vulnerable elder patients, including those prescribed by others caring for the same patient, can they formulate a medication regimen that will avoid duplication of medications, adverse drug-drug interactions, and errors.(28) In addition, such knowledge helps physicians minimize the complexity of the medication regimen, which, in turn, enhances patient adherence to the regimen.

No clinical trials of prescription documentation between providers have been conducted. A retrospective study showed that medication errors increased in the outpatient setting as the number of prescription medicines increased.(29) Such errors may occur when physicians lack accurate knowledge of a patient's prior medication regimen. A basic tenet of geriatrics is for the physician to be aware of a patient's full medication regimen and that physicians should inquire about medications that were

“prescribed by other physicians or purchased over the counter”.(30) “Prescription medication” as specified in the indicator excludes stool softeners, vitamins, dietary supplements, and over-the-counter medications.

Quality Indicator #4

Communication of Reason for Consultation

IF an outpatient, vulnerable elder is referred to a consultant physician, **THEN** the reason for consultation should be documented in the consultant’s note **BECAUSE** in order for the consultation to be most useful to the patient and to the referring physician, consultants must be aware of the reason for a consultation.

Supporting Evidence: No trials have evaluated an intervention to improve communication of the reasons for consultation. However, a survey of physicians evaluating the inpatient consultation process revealed that consultant misunderstanding of the reason for consultation was a common reason for referring physicians to declare a consultation ineffective.(31) Effective communication of the reason for a consultation requires communication between the referring physician and the consultant. Clear and concise communication about the reason for a consultation as well as essential aspects of the case is prescribed by the American Medical Association (32) and primary care texts.(33)

A survey study of primary care physicians and consultants supports the importance of specifying the reason for consultation. In this survey, all primary care physicians and 94% of consultants agreed that the referral letter should include a

statement of the problem, and 88% of primary care physicians and 94% of consultants agreed that the referral letter should include the primary care physician's expectations from the referral.(34)

Quality Indicator #5

Communication of Consultant Recommendations to Referring Physician

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 six weeks or at the time of the follow-up visit, whichever is later, **BECAUSE** referring physicians must be aware of consultant recommendations in order to implement or continue treatments and to avoid medication prescribing errors and adverse medication interactions.

Supporting Evidence: No clinical trials of the outcomes of consultant-to-referring physician communication were identified. However, the study of physician perceptions of the effectiveness of inpatient consultations revealed that poor communication of findings and recommendations was associated with referring physicians' perceptions of less useful consultations.(29)

The American Medical Association dictates that "the consultant should advise the referring physician of the results of the consultant's examination and recommendations related to the management of the case."(30) A survey of British primary care physicians and consultants supports this position: 97% to 99% of physicians agreed that written

correspondence from the consultant to the referring physician should include an appraisal of the problem and a management plan.(32)

Quality Indicator #6:

Follow-up of Diagnostic Tests in the Outpatient Setting

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:

- the result of the test, or
- that the test was not needed or the reason why it will not be performed, or
- that the test is still pending

BECAUSE diagnostic testing must be followed up in order to affect care, and requested procedures that are not performed may represent missed diagnostic or therapeutic opportunities.

Supporting evidence: Although no trials have shown that follow-up of missed tests results in improved patient outcomes, test results must be known to the physician to have an impact on a patient's health. For many patients, the complexities of health care delivery create barriers to obtaining procedures. Patients in the outpatient setting often forget recommendations to undergo procedures.(34) While no quantification of missed procedures in the outpatient setting has been performed, one study found that many

procedures and therapies recommended during an in-patient stay are never performed after hospital discharge.(35)

Quality Indicator #7

Follow-up of Medication after Hospital Discharge

IF a vulnerable elder is discharged from a hospital to home, and he or she received either a new prescription medication or a change in medication (medication termination or change in dosage) prior to discharge, **THEN** the outpatient medical record should acknowledge the medication change within 6 weeks of discharge **BECAUSE** knowledge of medications initiated or changed in the hospital is necessary to continue treatments begun in the hospital and to avoid medication prescribing errors and medication interactions after discharge.

Supporting evidence: No trials of the effects of physician acknowledgment of medications post-discharge were found. However, patients are likely to have their medications changed during a hospitalization. One observational study showed that 1.5 new medications were initiated per patient during hospitalization, and 28% of chronic medications were canceled by the time of hospital discharge.(36) Another observational study showed that at one week post-discharge, 72% of elderly patients were taking incorrectly at least one medication started in the inpatient setting, and 32% of medications were not being taken at all.(37) One survey study faulted the quality of

discharge communication as contributing to early hospital readmission, although this study did not implicate medication discontinuity as the cause.(38)

Quality Indicator #8

Continuity of Test Results between Venues of Care

IF a vulnerable elder is discharged from a hospital to his or her 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 six weeks of hospital discharge **BECAUSE** test results may have important implications for patient care.

Supporting evidence: Laboratory, pathologic and radiological test results often direct changes in clinical care, and such results may be lost in the transition from hospital to the outpatient or nursing home care setting. Many NLHI performance measures focus on continuity of test results from the hospital to the outpatient care setting.(3) For two reasons, this quality indicator limits the tests for which follow-up documentation is required to those described as pending in physician notes or a discharge summary: (1) no reliable method exists for identifying all pending tests at the time of hospital discharge, and (2) tests listed as pending are likely to have clinical importance. The six-week interval between hospital discharge and outpatient (or nursing home) documentation of test results is intended to allow time for the test to be completed, for the result to be communicated, and for the documentation to occur at a patient visit (if necessary).

Quality indicator #9**Medical Visits and Appointments after Hospitalization**

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 (e.g., 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 **BECAUSE** physician visits and treatments after hospital discharge facilitate follow-up of inpatient care and continued treatment.

Supporting Evidence: Patients are scheduled for appointments after hospital discharge to follow-up on instability, to monitor therapies initiated during the hospitalization, to evaluate or treat new problems detected during the hospitalization, or to continue treatment begun during the hospitalization. One study of 211 frail older patients discharged from a hospital noted that only 39% followed-up with their family physician within six weeks of discharge, while 65% kept appointments at the geriatric assessment unit, and 81% attended the geriatric psychology clinic.(35) Compliance with these follow-up visits was enhanced by coordination between the inpatient ward and the outpatient office or unit, and reduced by discharge plan complexity. No health-related outcomes were noted in this observational study.

Quality Indicator #10

Follow-up after Hospital Discharge

IF a vulnerable elder is discharged from a hospital to his or her home and survives at least four weeks after discharge, **THEN** he or she should have a follow-up visit or documented telephone contact within six weeks of discharge **AND** the physician's medical record documentation should acknowledge the recent hospitalization **BECAUSE** follow-up with a health provider after hospital discharge is needed for management of the disease process that prompted the hospitalization and for review of medications, treatment modalities, and pending test results.

Supporting evidence: No trial has evaluated the clinical outcomes of isolated hospital follow-up. However, vulnerable elderly patients discharged from the hospital to their homes are likely to need follow-up with their physician for one or more of the following reasons:

- Review of the disease process for which they were hospitalized
- Review of medications or other treatment regimens initiated during the hospitalization
- Review of *changes* in medication or other treatment regimens made during the hospitalization
- Follow-up on laboratory and other test results that were pending at the time of discharge.

One randomized trial demonstrated that a comprehensive program of discharge planning and home follow-up visits at 2, 6, 12, and 24 weeks post-discharge (by advance practice nurses) resulted in fewer re-admissions and lower re-admission costs.(14) However, the trial showed no differences between intervention and control groups in post-discharge acute care visits, functional status, depression or patient satisfaction. Another randomized trial of a comprehensive education and follow-up intervention for patients with congestive heart failure also revealed decreased hospitalization rates.(39) Because a comprehensive home-based intervention is beyond the capability of most community practice, this indicator requires an in-person or telephone follow-up with a clinician rather than a program of home-based follow-up. A study of one vulnerable group of patients found that 46% had not received follow-up one month after hospital discharge.(40)

The NLHI performance measure on follow-up of hospitalization requires ambulatory setting follow-up after hospital discharge for patients with diabetes, hypertension, ischemic heart disease, congestive heart failure, chronic obstructive pulmonary disease, or osteoarthritis.(3) No timeframe is provided in their indicator. This quality indicator expands the applicable population to include all vulnerable elders, because the NLHI conditions are prevalent in this population, and the reasoning presented above applies to all vulnerable elders.

Quality Indicators #11 and #12

Medical Record Transfer

IF a vulnerable elder is transferred between emergency rooms 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.

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 **BECAUSE** continuity of critical clinical information facilitates treatment of patients after transfer.

Supporting evidence: No clinical trials were identified that evaluated the effect of preservation of medical information across facilities. However, patients transferred between hospitals and between hospitals and nursing homes often are unable to communicate important elements of their medical history, and this information is essential to the provision of appropriate medical care.(41) One textbook of nursing home care suggests that information transferred between the nursing home and the hospital should include face sheets, orders, progress notes, laboratory results and information on advance directives.(42)

State and local regulations require prompt transfer of clinical data between nursing homes and hospitals. Similarly, the Emergency Medical Treatment and Active Labor Act, a federal antidumping statute, requires complete transfer of medical records between

emergency rooms.(43) However, these regulations may not be completely effective.

One study of transfers of nursing home patients to two emergency rooms in the Midwest revealed that 10% lacked medical record documentation.(44)

Quality Indicator #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 **BECAUSE** interpreters and translated materials help to ensure that information related between physician and patient is understood.

Supporting evidence: Approximately 2 million Americans are deaf and more than ten times that number speak are non-English speaking. While some physicians speak the foreign language of their patients, many do not and few are able to communicate in American sign language. Thus, physician-patient communication can be substantially impeded if the patient is non-English speaking or is deaf. Under such circumstances, employment of proper modalities to facilitate communication may not occur due to logistic and time constraints. For example, one survey revealed that although internal medicine physicians were aware that use of a sign language interpreter was most useful in treating deaf patients, most did not use this modality.(45) A qualitative study revealed that deaf patients perceive their medical care to be adversely affected by physicians' lack of preparation and skill.(46) A randomized trial of a remote translation service (47) and a survey study of non-English speaking patients in an emergency room (48) demonstrated that communication can be improved by translation. Agency for Health Care Policy and

Research (AHCPR) guidelines recommend the use of interpreters and/or translated materials for deaf and non-English speaking patients.(49)

DISCUSSION

Continuity and coordination of care are recognized as essential elements of the quality of care. However, few clinical trials provide direct evidence to support the continuity and coordination actions of physicians. Thus, the majority of the quality indicators proposed in this article and considered valid by the expert panel process are based on clinical judgment and opinion. A paucity of data – nearly all observational – support these quality indicators. A major finding of this effort is the glaring deficiency of clinical trials of continuity and coordination processes of care.

Because of care transitions, loss of mental capacity, and sensory deficits, vulnerable elders may be at increased risk of adverse events from poor continuity and coordination of care. This project investigated the relationship between processes and outcomes of care and aimed to develop explicit criteria to evaluate the continuity and coordination of care for vulnerable older patients. Twelve indicators were judged sufficiently valid for use as measures of quality of continuity and coordination for vulnerable elders. These indicators can potentially serve as a basis to compare the care provided by different health care delivery systems and for comparing the change in care over time.

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