

Restructuring Primary Care Practices to Manage Geriatric Syndromes: The ACOVE-2 Intervention

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Despite evidence suggesting that primary care physicians do not address geriatric conditions adequately in practice, most efforts to change physicians' practice behaviors have been ineffective or too expensive to implement and sustain.

In its second phase, the Assessing Care of the Vulnerable Elders (ACOVE-2) project has developed an intervention aimed at improving the care that primary care physicians provide for three geriatric conditions—falls, urinary incontinence, and cognitive impairment/dementia. The intervention addresses specific processes of care identified in the first phase of the ACOVE project (ACOVE-1) as important to the care of community-dwelling older persons. Beginning with case finding, the intervention uses a standardized multicomponent practice-change effort. The condition-specific intervention employs four methods of changing medical practice: efficient collection of condition-specific clinical data, medical record prompts to encourage performance of essential care processes, patient education materials and activation of the patient's role in follow-up, and physician decision support and physician education. Moreover, the costs of the intervention are low. The effectiveness of the intervention in improving the processes of care for these conditions and clinical outcomes will need to be evaluated in controlled trials. *J Am Geriatr Soc* 51:1787–1793, 2003.

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As a result of the increased burden of disease and disability associated with aging, older persons require more health care than younger persons.¹ This care is expensive, and the cost is rising at a faster rate than

healthcare costs for younger persons.² In spite of these high expenditures, studies have shown that the care that older persons receive is frequently inadequate, especially for geriatric conditions (e.g., incontinence, falls, dementia, undernutrition).³ Although for some conditions (e.g., diabetes mellitus,⁴ screening for lipid disorders⁵) the optimal care of older persons is less well established than for younger persons, there is substantial evidence, based on published research, about how most geriatric syndromes and diseases of older persons should be managed.⁶ Frequently, this evidence has also been published as practice guidelines, quality indicators, and evidence-based medicine reports, but merely agreeing upon standards of care does not mean that physician behavior will change or best practices will be implemented. In fact, the term “knowledge-practice gap” has been used to describe the difference between evidence-based effective management and care actually provided.⁷

Implementing changes to improve the care of older persons in existing clinical settings has been remarkably difficult. Previous attempts to change physician performance through traditional continuing medical education have been largely ineffective.⁸ Many factors, including physician knowledge, attitudes, and behaviors, contribute to this inertia.⁹ Physician barriers to adhering to guidelines have been well described.⁹ These include lack of awareness or familiarity with the guidelines, disagreement with specific guidelines or guidelines in general, disbelief that the performance of guideline-specified care processes will lead to desired outcomes, lack of self-efficacy to perform the care process, and inability to overcome existing practice habits. Additional obstacles include patient factors and environmental factors, such as lack of time, resources, or reimbursement.⁹ Many of these barriers apply to the management of geriatric conditions. For example, inadequate case recognition, lack of physician knowledge about management, poor patient adherence, and inadequate follow-up are likely to perpetuate the provision of care that is inconsistent with evidence-based standards. Perhaps most important, clinicians commonly believe that evidence-based care takes more time.⁹ For most clinicians and healthcare systems, adding time to each encounter is simply not a viable option.

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In response, researchers have begun attempts to change physician performance in the context of modifying the basic structure of care. Innovative models, such as group visits¹⁰ and chronic care clinics,¹¹ have been developed and evaluated, but few models focus on changing practice within individual primary care physicians' offices without adding personnel or implementing costly structural improvements (e.g., computerized medical records). The Assessing Care of Vulnerable Elderly Persons (ACOVE) project developed a definition of vulnerable elders and then developed and documented a set of process of care quality indicators covering 22 conditions important for older persons.^{3,4,6} In response to the deficiencies demonstrated in the care of geriatric conditions, the second phase of the ACOVE (ACOVE-2) project developed a model to improve the care of older persons in community-based physicians' practices using existing resources. This paper describes how this model has been implemented in community-based primary care physicians' offices as part of a controlled clinical trial.

DESCRIPTION OF THE PROGRAM

Overview

The ACOVE-2 intervention was designed to improve the primary care provided to outpatients aged 75 and older who have at least one of three geriatric conditions: urinary incontinence, falls, or cognitive impairment/dementia. The intervention is integrated into the context of a regularly scheduled visit and begins with case finding, which is followed by a standardized multicomponent practice-change effort (Figure 1). For each condition, the intervention addresses specific processes of care identified in ACOVE as important to the care of older persons residing in the community.^{12–14}

If an older person is identified as having bothersome incontinence, falls (or fear of falling), or memory loss, a condition-specific intervention is initiated that employs four methods of changing medical practice.

1. efficient collection of condition-specific clinical data, including information collected by nonphysicians and automatic orders for simple procedures
2. medical record prompts to encourage performance of essential care processes
3. patient education materials and activation of the patient's role in follow-up
4. physician decision support and physician education

Intervention Components

Identifying Cases

A mechanism was implemented to screen patients for the relevant conditions. In the practices presented here, patients received a telephone call from an employee of the practice before a scheduled clinic visit to ask a brief series of questions to identify bothersome incontinence, memory loss, or falls or fear of falling (Figure 2). (Other means of screening could include in-office administration of the screen by office staff or administration of a patient previsit questionnaire.) These screening questions were designed for clinical rather than research purposes, and positive re-

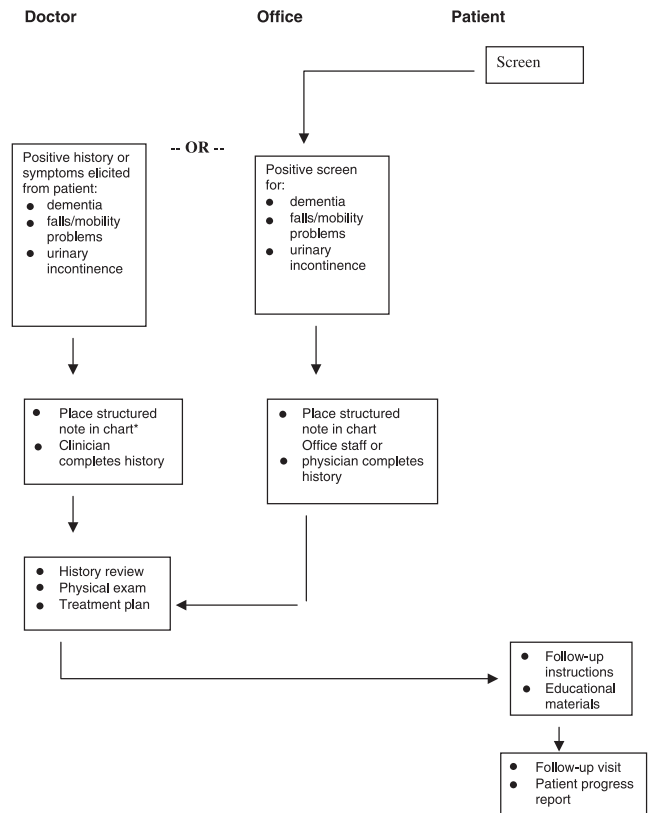


Figure 1. Assessing Care of the Vulnerable Elders-2 intervention process. *If the physician elicits symptoms, the physician has the materials readily available to insert them into the chart.

sponses aimed to identify clinical situations that should prompt a physician response. For example, rather than using a validated screen for identification of incontinence, a single question was constructed to identify incontinence that was bothersome enough that the patient would like to know more about how it could be treated. In this manner, only conditions of clinical importance were brought to the physician's attention. If patients were unable to respond to the questions (e.g., due to cognitive impairment), or if they preferred, a proxy was allowed to answer these items. The patient's (or proxy's) answers to these questions were given to his or her provider at the time of the clinic appointment.

Initiating the Intervention

Screening results (positive or negative) were placed on the patient's chart at the time of the visit. For patients who had a positive screen based on answers to previsit questions, additional condition-specific materials, including a structured visit note, were attached to the medical record at the time of the patient's scheduled visit. (These materials were also readily available in each examining room in the event that the clinician identified a case that the case-finding method described above did not detect.) If multiple conditions were triggered, the attachment of condition-specific materials was prioritized so that the physician was not inundated with forms to be completed at a single visit; the priority was memory loss, then falls, and finally incontinence. A physician could address more than one

Name: _____
 Study ID #: _____

Appointment date & time: _____
 Dr. _____

ACOVE-2: PATIENT/SURROGATE SCREEN

If patient is confused, an attempt is made to find a surrogate before any questions are asked. At any point, the patient may turn the call over to a surrogate for other reasons (e.g., hard of hearing, too sick to talk)

(New) In the **PAST 12 MONTHS**,
 OR
 (Established) Since your **LAST VISIT HERE**,

(CONDITION TRIGGERED)

1. Have you (if surrogate, has he/she):

- | | YES | NO |
|--|----------------------------|--------------------------|
| Fallen 2 or more times
<i>(*Falls)</i> | <input type="checkbox"/> * | <input type="checkbox"/> |
| Fallen and hurt yourself or needed to see a doctor because of the fall
<i>(*Falls)</i> | <input type="checkbox"/> * | <input type="checkbox"/> |
| Been afraid that you would fall because of balance or walking problems
<i>(*Falls)</i> | <input type="checkbox"/> * | <input type="checkbox"/> |
| Had a problem with urinary incontinence (or your bladder) that is bothersome enough that you would like to know more about how it could be treated
<i>(*UI)</i> | <input type="checkbox"/> * | <input type="checkbox"/> |

2. Patient: 3-item recall

- Patient recalled: 2-3 items
- * **1 item, no surrogate available** *(*Dementia)*
- * **0 items, no surrogate available** *(*Dementia)*
- * **Refused, no surrogate available** *(*Dementia)*
- Refused, no surrogate needed

If a patient fails the 3-item and a surrogate is available, the screening process starts over (the incontinence and falls data from the patient are discarded). The results are those given by the surrogate PLUS the results of the 3-item recall, if it was done.

3. Surrogate: Have you noticed that _____ has recently had more trouble than in the past with memory for day-to-day happenings around the house, such as remembering where he/she put things, recalling recent events, forgetting what you told him/her, or what he/she told you, remembering plans, appointments or phone calls?

- * **Yes** *(*Dementia)*
- No/Don't know

* indicates positive screen

(Medical Group logo here)

Patient Name: _____
 Med. Rec.# _____

Figure 2. Assessing Care of the Vulnerable Elders-2: Patient/Surrogate Screen.

condition during a visit or may have decided to schedule subsequent planned visits to address the other conditions.

Collecting Clinical Data

The content of the data collection forms was derived from literature reviews, quality indicators created for the ACOVE project, and clinical judgment. An example of a structured visit note is provided in Figure 3. Structured visit notes for other conditions are available upon request from the first author. A portion of this note contained history items (e.g., circumstances of fall, mobility) and simple procedures (e.g., vision screening) that the office staff could expediently complete to facilitate the physician's approach to the condition. The clinician decided how much and what to delegate. The structured visit note then guided the physician to consider potentially important historical and examination elements and suggested diagnostic tests that might be performed. The structured note also facilitated development of an impression and plan that was supported by patient education materials and physician decision support resources.

Patient Education Materials

Condition-specific patient information (e.g., home safety checklist and information about pelvic floor exercises, driving, and dementia), much of which was adapted from the National Institute on Aging's Age Pages, and condition-specific local community-based resources to facilitate management (e.g., community-based exercise groups, transportation assistance) were assembled for dementia, falls, and urinary incontinence. These information handouts were available in each clinician's examination room, in bins mounted on the office wall or hanging file folders on a portable stand, to facilitate treatment. The materials were designed to enhance patient understanding of the condition and to augment adherence to the treatment plan while reducing the effort required by clinicians to educate and instruct the patient. The materials also extended the management options beyond what the medical system could otherwise offer. For example, these materials facilitated patients accessing community-based services that were not provided by their physician or health plan.

Follow-Up Sheet

A condition-specific follow-up sheet was attached to the patient materials to stimulate continuity of care for the condition on the part of the patient and the physician. Specifically, this sheet prompted the patient to monitor the response to treatment and report problems or complications (including inability to adhere to the recommended treatment) to the clinician.

Decision Support and Physician Education

Each physician practice group participated in one small, 3-hour educational group session led by a geriatrician that demonstrated practical approaches to each of the three conditions within the context of a busy practice without adding length to the visit. Although these sessions provided some insight that conducting the recommended assessments might allow for billing at higher levels, the focus of the session was not on billing. Brief, written decision-support

information adapted from the American Geriatric Society's *Geriatrics at Your Fingertips*¹⁵ was also provided that described the management of each of the conditions. In addition, after several weeks of piloting the intervention, small group sessions were held with physicians to review charts of patients who triggered the intervention and to discuss physicians' experiences with restructuring the care for these conditions. At that time, the physicians were asked to make modifications in the protocol that would help facilitate in-office implementation and clinical management of the conditions.

Implementing the Intervention in Medical Groups

As part of a study that will assess the effectiveness of this intervention on processes and some outcomes of care, two medical practices (each composed of nine physicians, one also using a nurse practitioner) have implemented this system of caring for these conditions. One of the practices had geriatricians available, and a consultation could be requested at any physician's discretion. The other practice had no easily accessible geriatrician available. Both practices served patient populations that had large numbers of retirees and were primarily white and somewhat affluent. Persons aged 65 and older were estimated to represent 50% to 60% of each practice. With respect to payor mix for their older patients, one practice cared for almost exclusively managed care patients and the other for mostly fee-for-service Medicare patients. Each practice was required to address all three conditions using all components of the intervention, but they had flexibility in how the components were administered and the content of these components. For example, the practices modified the content of the structured visit notes to fit within their own guidelines (e.g., rules concerning when a neuroimaging test could be ordered for cognitive impairment). Groups also had considerable latitude in how the components were implemented (e.g., how much of the intervention office staff performed, rather than physicians). In a further modification of implementation, one group that relied primarily on dictated notes chose to reformat the structured visit note as a dictation template. The major barrier encountered in implementing the intervention was inconsistency in how enthusiastically physicians adopted the intervention. Although some quickly embraced the changes, others were slower converts, and some remained skeptical.

Costs Associated with the Program

The costs of this program included those required for start-up and those needed to maintain the program. Start-up costs included establishing a screening mechanism, customizing forms, identifying condition-specific local community-based resources, training physicians and office staff, and installing clinic materials. The estimated start-up costs vary depending upon how much time must be devoted to obtaining physician and staff "buy-in" and the extent to which the practice group revises the materials. Other start-up costs are estimated here for a medical group of 10 participating physicians. These include purchasing and stocking 20 rolling files of materials (\$1,600), creating and photocopying physician and medical assistant training manuals (\$80), physician training (\$1,250 honorarium for

PATIENT VISIT: FALLS/MOBILITY PROBLEMS

Reason for Visit: Fall since last visit (or in last year, if new patient) (MA: Complete Q1-5)
 Fear of falling due to balance/trouble walking only (MA: Complete Q4-5 only)

History of Present Illness:

- NO**
- Date last fall occurred: _____
 - Circumstances of fall: **YES** **NO**
 Loss of consciousness.....
 Tripped/stumbled over something.....
 Lightheadedness/palpitations.....
 Unable to get up within 5 minutes.....
 Needed assistance to get up.....
 - Orthostatics: (Measure after 1-2 min. in specified position)
 Lying: BP: ____/____ Pulse: ____
 Standing: BP: ____/____ Pulse: ____

4. Uses device for mobility? **YES**
- Cane.....
 Walker.....
 Wheelchair.....
 Other, specify: _____
5. Vision:
 Noticed recent vision change.....
 Eye exam in past year.....
- If **NO** eye exam in past year,
 visual acuity today:
 OS: 20/____ OD: 20/____ OU: 20/____

-
6. Psychotropic medications (specify): **YES** **NO**
- Neuroleptics: _____
 Benzodiazepines: _____
 Antidepressants: _____
7. 2 or more drinks alcohol each day **YES** **NO**
8. Other conditions (e.g., Parkinson's, CVA, cardiac, neuropathy, severe OA), specify: _____

Examination:

1. **Cognition:** 3-Item recall: PASS FAIL If FAIL →Cognitive status:

2. **Gait:** NORMAL ABNORMAL

- Up-and-Go: ____sec
 Abnormal if: -Hesitant start -Heels do not clear toes of other foot
 -Broad-based gait -Heels do not clear floor
 -Extended arms -Path deviates

If indicated,
Timed-

-Stand from chair,
-Walk 10 feet,
-Turn around,
-Walk back,
-Sit down

3. **Balance:** **YES** **NO** If indicated: **YES** **NO**
- Side-by-side, stable 10 sec.... Can pick up penny off floor.....
 Semi-tandem, stable 10 sec.. Resistance to nudge.....
 Full tandem, stable 10 sec.....

4. **Neuromuscular:** **YES** **NO** **YES** **NO**
- Quad strength: Can rise from chair w/o using arms... Rigidity (e.g., cogwheeling).
 If indicated, hip ROM and knee exam: Brady kinesia.....
 Tremor.....

Diagnosis / Treatment Plan / Medical Decision Making:

- Lab/Tests:** EKG **Impression:** Strength problem Severe hip/knee OA
 Holter monitoring Balance problem Other: _____
 Other: _____ Parkinsonism

Treatment:

- Patient education handout:
 "Falls"
 "Home safety checklist"
 Strength/balance exercises:
 Upper body Lower body
 Community resources
 Community exercise program
 Other: _____
- Referral for PT
 Assistive device: _____
 Referral for home safety inspection/modifications
 Change in medication(s): _____
 Referral for eye exam
 Cardiology consult
 Neurology consult

Provider's Signature _____

Date of Service _____

See PATIENT CLINICAL SUPPLEMENT:

(Medical Group logo here)

Patient Name: _____
Med. _____
Rec.# _____

Figure 3. Patient Visit: Falls/Mobility Problems.

1.5 days of the geriatrics expert), and medical assistant training (\$400). Practice physician and medical assistant time spent receiving training is assumed to be noncompensated. Thus, total start-up costs are estimated at \$3,330 per practice.

Maintenance costs included time spent administering screens, additional staff time needed for the historical and examination components delegated to office staff, and the costs of stocking and updating the forms. This cost estimate assumes that each of the physicians sees 300 patients aged 75 and older during the course of a year, patients are screened when they are new to the practice and annually, medical assistants spend an average of 3 minutes screening each of these patients and an additional 3 minutes completing a designated portion of the patient history for the 30% of patients who have a positive screen, and medical assistants are compensated at a rate of \$12 per hour. Under these assumptions, the costs of medical assistant screening and history-taking time for 3,000 patients in a practice would be \$2,340, and the costs of stocking materials would be \$150; the total costs per patient screened would be 83 cents or \$2.77 per patient who screened positive. These costs do not include any additional physician time spent during the office visit to address these conditions. Based on the assumptions describe above and 240 office days per year, approximately 5.2 additional minutes per day of office staff time per physician would be required to administer the intervention to all persons aged 75 and older. Thus, the additional time to implement these practices would be unlikely to disrupt office flow sufficiently to require additional hiring or substantially lengthen wait times.

DISCUSSION

The structure of office-based clinical care is steeped in tradition. As noted by the Institute for the Future, "There has been little real change in the way physicians practice medicine since the invention of the telephone."¹⁶ As part of a study to improve the quality of care provided to older persons, the office-based management of three common and inadequately managed geriatric conditions was restructured.³ This restructuring was designed to overcome some of the major obstacles that contribute to inadequate care. Prior research has demonstrated deficits in case recognition (on the part of clinicians and patients) and physician knowledge of management concerning these conditions.¹⁷⁻²⁰ Lack of patient adherence to treatment plans and inadequate follow-up (by patient and clinician) also may contribute to less-than-optimal outcomes. In addition, lack of time and resources are likely to be major barriers to the treatment of these conditions, which may be given less importance than other mainstream clinical conditions. Recognizing these obstacles, this model of care attempts to increase case recognition, educate and guide clinicians about essential care processes, provide patient education, and enhance follow-up while minimizing disruption of practice procedures and flow.

In addition to systematic attempts to overcome these barriers, the ACOVE-2 intervention draws upon organizational and educational principles that have been demonstrated to be effective in changing provider behavior.⁸ It also is consistent with a chronic care model that includes

community resources and health system changes, to create an informed, activated patient and a prepared, proactive provider.²¹ Nevertheless, this restructuring of care recognizes that changes, even if effective, must fit within the cost constraints of the current healthcare environment. Accordingly, the intervention was designed to be low-tech to facilitate its use within most practice settings and relatively low-cost, using only existing personnel whose roles have been modified. These advantages will facilitate dissemination if the intervention proves to be effective in changing the process of care. Moreover, the intervention will be easily adaptable to electronic medical records systems once these become more widely available.

It is important to recognize that this restructuring goes beyond simply providing tool kits to physicians. In fact, practitioners needed to demonstrate a commitment that they wanted to improve care for these conditions before the model could be implemented. This interest in change was an important factor in selecting sites and has been noted as a key issue in dissemination of research findings into practice.⁷ Once this commitment was secured, a critical step was working with the physicians to develop a model that they could use. In addition, the training component, which focused on the practical aspects of how a clinician can manage these conditions without adding substantially to the length of the visit, was essential. Merely providing the results of screening has not resulted in practice change or improved clinical outcomes.^{22,23}

Several limitations to this model of care must be recognized. First, this change was accomplished in the context of a research study. Thus, the decision to adopt this model was based on factors other than those that naturally guide adoption of innovations (knowledge, persuasion, decision, implementation, and confirmation).²⁴ Nevertheless, some guiding principles (relative advantage, complexity, compatibility, trialability, and observability) that promote behavior change with respect to adoption of innovation²⁴ were specifically and systematically incorporated in the development of the intervention. Because this program was initiated in the context of a research project, economic factors may have assumed less importance in deciding whether to adopt and implement these changes. Although the ACOVE-2 changes in care delivery were designed to have modest effects on the length of visits, any additional time must be justified by recognizable clinical value or increased compensation. Otherwise, the change will not be sustained. The current evaluation study relies on recognition of clinical value, although physicians were free to bill at higher levels if they believed that the additional evaluation justified doing so. In addition, the community-based practice had the assistance of health services researchers who had considerable experience in models of geriatric healthcare delivery. Moreover, the geriatrician who led the small group educational session was a senior academician. Whether other geriatricians could have similar influence remains uncertain. The generalizability of this model also is uncertain. Both of the practices in which implementation occurred were well-established, financially successful groups. Furthermore, the intervention has been limited to three conditions. It is unclear whether other geriatric conditions would fit this intervention format as well and whether the complexity of

addressing numerous conditions might overwhelm the practices. Most likely, physicians will need to prioritize multiple conditions, both geriatric and general medical, if more than one or two are present concurrently. Finally, the relative advantage of this model of geriatric practice compared with other potential methods of addressing these conditions is uncertain.

The effectiveness of this reorganization of medical care must be evaluated using a formal research design. Such a controlled trial is in progress. In the meantime, this demonstration of restructuring of office care for three common geriatric conditions indicates that substantive changes are feasible in community-based practices within the context of a research project.

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